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Bureau of Land Management Alturas Field Office

Draft Resource Management Plan and Environmental Impact Statement

Volume 2

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Public Lands USA; Use Share, Appreciate



The Bureau of Land Management

Our Vision

To enhance the quality of life for all citizens through the balanced stewardship of America's public lands and resources.

Our Mission

To sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

Our Values

To serve with honesty, integrity, accountability, respect, courage, and commitment to make a difference.

Our Priorities

To improve the health and productivity of the land to support the BLM multiple-use mission.

To cultivate community-based conservation, citizen-centered stewardship, and partnership through consultation, cooperation, and communication.

To respect, value, and support our employees, giving them resources and opportunities to succeed.

To pursue excellence in business practices, improve accountability to our stakeholders, and deliver better service to our customers.

BLM/CA/ES-2006-005+ 1790-1600

APPENDIXES, GLOSSARY, ABBREVIATIONS AND ACRONYMS, and BIBLIOGRAPHY MAPS



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(28" x 28" map in back cover pocket)

VEG-1
(28" x 28" map in back cover pocket)

GRAZ-1
(28" x 28" map in back cover pocket)

ROUTE INVENTORY
All Alternatives

VEGETATION TYPES
All Alternatives

ALLOTMENT MANAGEMENT PRIORITY BY
WATERSHED
All Alternatives

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Appendix A

Applicable Laws and Management Guidance

Appendix A: Applicable Laws and Management Guidance

Decisions contained in this Final EIS and RMP comply with all applicable laws, regulations, and management guidance that direct the BLM in its resource management activities. This appendix lists the major legal authorities relevant to BLM land use planning.

1. The Federal Land Policy and Management Act of 1976 (FLPMA), as amended, 43 U.S.C. 1701 et seq., provides the authority for BLM land use planning.
 - a. Sec. 102 (a) (7) and (8) and 103(c) sets the policy of the United States concerning the management of BLM lands.
 - b. Sec. 201 requires the Secretary of the Interior (the Secretary) to prepare and maintain an inventory of all BLM lands and their resource and other values; and, as funding and workforce are available, to determine the boundaries of the public lands, provide signs and maps to the public, and provide inventory data to State and local governments.
 - c. Sec. 202 (a) requires the Secretary, with public involvement, to develop, maintain, and when appropriate, revise land use plans that provide by tracts or areas for the use of the BLM lands.
 - d. Sec. 202 (c) (9) requires that land use plans for BLM lands be consistent with tribal plans and, to the maximum extent consistent with applicable Federal laws, with State and local plans.
 - e. Sec. 202 (d) provides that all public lands, regardless of classification, are subject to inclusion in land use plans, and that the Secretary may modify or terminate classifications consistent with land use plans.
 - f. Sec. 202 (f) and Sec. 309 (e) provide that federal agencies, state and local governments, and the public be given adequate notice and an opportunity to comment on the formulation of standards and criteria for, and to participate in, the preparation and execution of plans and programs for the management of the public lands.
 - g. Sec. 302 (a) requires the Secretary to manage BLM lands under the principles of multiple use and sustained yield, in accordance with, when available, land use plans developed under Sec. 202 of FLPMA, except that where a tract of BLM lands has been dedicated to specific uses according to any other provisions of law, it shall be managed in accordance with such laws.
 - h. Sec. 302 (b) recognizes the entry and development rights of mining claimants, while directing the Secretary to prevent unnecessary or undue degradation of the public lands.
 - i. Sec. 505(a) requires that "...each right-of-way shall contain terms and conditions which will ... minimize damage to the scenic and esthetic values..."
2. The National Environment Policy Act of 1969 (NEPA), as amended, 42 U.S.C. 4321 et seq., requires the consideration and public availability of information regarding the environmental impacts of major federal actions significantly affecting the quality of the human environment. This includes the consideration of alternatives and mitigation of impacts.
3. The Clean Air Act of 1990, as amended, 42 U.S.C. 7418, requires federal agencies to comply with all federal, state, and local requirements regarding the control and abatement of air pollution. This includes abiding by the requirements of State Implementation Plans.
4. The Clean Water Act of 1987, as amended, 33 U.S.C. 1251, establishes objectives to restore and maintain the chemical, physical, and biological integrity of the Nation's water.
5. The Federal Water Pollution Control Act, 33 U.S.C. 1323, requires the federal land manager to comply with all federal, state, and local requirements; administrative authority; process; and

sanctions regarding the control and abatement of water pollution in the same manner and to the same extent as any non-governmental entity.

6. The Safe Drinking Water Act, 42 U.S.C. 201, is designed to make the Nation's waters "drinkable" as well as "swimmable." Amendments establish a direct connection between safe drinking water, watershed protection, and management.
7. The Endangered Species Act of 1973 (ESA), as amended, 16 U.S.C. 1531 et seq.:
 - a. Provides a means whereby the ecosystems upon which endangered and threatened species depend may be conserved and to provide a program for the conservation of such endangered and threatened species (Sec. 1531 [b], Purposes).
 - b. Requires all federal agencies to seek the conservation of endangered and threatened species and utilize applicable authorities in furtherance of the purposes of the Endangered Species Act (Sec. 1531 [c] [1], Policy).
 - c. Requires all federal agencies to avoid jeopardizing the continued existence of any species that is listed or proposed for listing as threatened or endangered or destroying or adversely modifying its designated or proposed critical habitat (Sec. 1536 [a], Interagency Cooperation).
 - d. Requires all federal agencies to consult (or confer) in accordance with Sec. 7 of the Endangered Species Act with the Secretary of the Interior, through the Fish and Wildlife Service and/or the National Marine Fisheries Service, to ensure that any federal action (including land use plans) or activity is not likely to jeopardize the continued existence of any species listed or proposed to be listed under the provisions of the Endangered Species Act, or result in the destruction or adverse modification of designated or proposed critical habitat (Sec. 1536 [a], Interagency Cooperation, and 50 CFR 402).
8. The Wild and Scenic Rivers Act, as amended, 16 U.S.C. 1271 et seq., requires the federal land management agencies to identify river systems and then study them for potential designation as wild, scenic, or recreational rivers.
9. The Wilderness Act, as amended, 16 U.S.C. 1131 et seq., authorizes the President to make recommendations to the Congress for federal lands to be set aside for preservation as wilderness.
10. The Antiquities Act of 1906, 16 U.S.C. 431-433, protects cultural resources on federal lands and authorizes the President to designate national monuments on federal lands.
11. The National Historic Preservation Act (NHPA), as amended, 16 U.S.C. 470, expands protection of historic and archaeological properties to include those of national, state, and local significance and directs federal agencies to consider the effects of proposed actions on properties eligible for or included in the National Register of Historic Places.
12. The American Indian Religious Freedom Act of 1978, 42 U.S.C. 1996, establishes a national policy to protect and preserve the right of American Indians to exercise traditional Indian religious beliefs or practices.
13. Federally Recognized Tribes and Tribal Reserved Rights - Federally recognized tribes are sovereign nations that maintain a unique government to government and trust relationship with the United States (American Indian Resources Institute 1988:26). The trust relationship is

essentially one in which Indian tribes trust the federal government to honor the reserved rights made in treaties or other agreements in exchange for Indian lands¹.

In the past, this relationship has been acknowledged in one of three ways; by treaty ratification, Congressional Act, or executive order². The various treaties, congressional acts, and executive orders that have been crafted during the past 150 years have established a unique legal relationship with the three federally recognized tribes and the United States government. Part of that legal relationship may be found in the tribes' reserved rights and privileges to harvest and utilize traditional resources, to visit and maintain sacred sites, and to participate in ceremonies that preserve the essential elements of their culture. Those resources and sacred sites, located on ancestral lands and ceded to the federal government, now constitute a large part of the public domain.

14. The Recreation and Public Purposes Act of 1926, as amended, 43 U.S.C. 869 et seq., authorizes the Secretary of the Interior to lease or convey BLM lands for recreational and public purposes under specified conditions.
15. The Surface Mining Control and Reclamation Act of 1977, 30 U.S.C. 1201 et seq., requires application unsuitability criteria prior to coal leasing and also to proposed mining operations for minerals or mineral materials other than coal.
16. The Mineral Leasing Act of 1920, as amended, 30 U.S.C. 181 et seq., authorizes the development and conservation of oil and gas resources.
17. The Onshore Oil and Gas Leasing Reform Act of 1987, 30 U.S.C. 181 et seq., stipulates that:
 - a. Potential oil and gas resources be adequately addressed in planning documents;
 - b. The social, economic, and environmental consequences of exploration and development of oil and gas resources be determined; and
 - c. Any stipulations to be applied to oil and gas leases be clearly identified.
18. The General Mining Law of 1872, as amended, 30 U.S.C. 21 et seq., allows the location, use, and patenting of mining claims on sites on public domain lands of the United States.
19. The Mining and Mineral Policy Act of 1970, 30 U.S.C. 21a, establishes a policy of fostering development of economically stable mining and minerals industries, their orderly and economic development, and studying methods for disposal of waste and reclamation.
20. The Materials Act of 1947, as amended (30 U.S.C. 601–604, et seq.), provides for the sale of common variety materials for personal, commercial, or industrial uses and for free use for local, state, and federal governmental entities. The sales of mineral materials are controlled by the regulations listed in 43 CFR 3600.
21. The Taylor Grazing Act of 1934, 43 U.S.C. 315, “[T]he Secretary of the Interior is authorized, in his discretion, by order to establish grazing districts or additions thereto... of vacant unappropriated and unreserved lands from any part of the public domain...which in his opinion

¹ Pevar, S.L. 1992. *The Rights of Indians and Tribes: The Basic American Civil Liberties Union Guide to Indian and Tribal Rights*. Southern Illinois University Press, Carbondale and Edwardsville.

² Zucker, J., K. Hummel, and B. Hogfoss. 1983. *Oregon Indians: Culture, History and Current Affairs, an Atlas and Introduction*. Western Imprints, the press of the Oregon Historical Society. Portland.

are chiefly valuable for grazing and raising forage crops[.]...” The Act also provides for the classification of lands for particular uses.

22. The Public Rangelands Improvement Act of 1978, 43 U.S.C. 1901, provides that the public rangelands be managed so that they become as productive as feasible in accordance with management objectives and the land use planning process established pursuant to 43 U.S.C. 1712.
23. The Wild Free Roaming Horse and Burro Act of 1971, 43 U.S.C 1331–1340, provides for the management, protection, and control of wild horses and burros on public lands and authorizes “adoption” of wild horses and burros by private individuals. Regulations applicable to wild horse and burro management on BLM-administered lands are provided in 43 CFR 4700.
24. The Archaeological Resources Protection Act of 1979, 16 U.S.C. 470, secures the protection of archaeological resources and sites which are on public lands and Indian lands, and to foster increased cooperation and exchange of information between governmental authorities, the professional archaeological community, and private individuals having collections of archaeological resources and data which were obtained before October 31, 1979.
25. The Native American Graves Protection and Repatriation Act of 1990, 25 U.S.C. 3001, addresses the rights of lineal descendants, Indian tribes, and Native Hawaiian organizations to Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony. It requires federal agencies and museums to provide information about Native American cultural items to parties with standing and, upon presentation of a valid request, dispose of or repatriate these objects to them.
26. The Migratory Bird Conservation Act of 1979, as amended, 16 U.S.C. 715 et seq., establishes a Migratory Bird Conservation Commission to approve areas recommended by the Secretary of the Interior for acquisition with Migratory Bird Conservation Funds.
27. The Bald Eagle Protection Act of 1973, 16 U.S.C. 668, establishes the eagle as a protected species.
28. The Energy Policy and Conservation Act Reauthorization of 2000, as amended, Public Law 106–469. For more information, please visit: <http://www.doi.gov/epca/>.
29. The National Trails System Act of 1968, as amended (16 U.S.C. 1241–1249), establishes a national trails system and requires that federal rights in abandoned railroads be retained for trail or recreation purposes, or sold with the receipts to be deposited in the Land and Water Conservation Fund.
30. Executive Order 11644 as amended by Executive Order 11989 (Off-Road Vehicles on Public Lands) established policies and procedures for controlling the use of off-road vehicles on public lands.
31. Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations), 49 Fed. Reg. 7629, requires that each federal agency consider the impacts of its programs on minority populations and low income populations.
32. Executive Order 13007 (Indian Sacred Sites), 61 Fed. Reg. 26771, requires federal agencies to the extent practicable, permitted by law, and not clearly inconsistent with essential agency functions to:

- a. Accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners; and
 - b. Avoid adversely affecting the physical integrity of such sacred sites.
33. Executive Order 13084 (Consultation and Coordination with Indian Tribal Governments) provides, in part, that each federal agency shall establish regular and meaningful consultation and collaboration with Indian tribal governments in the development of regulatory practices on federal matters that significantly or uniquely affect their communities.
34. Executive Order 13112 (Invasive Species) provides that no federal agency shall authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species unless, pursuant to guidelines that it has prescribed, the agency has determined and made public its determination that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk or harm will be taken in conjunction with the actions.
35. Executive Order 11990 (Protection of Wetlands) requires federal agencies to take action to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands.
36. Executive Order 11988 (Floodplain Management) provides for the restoration and preservation of national and beneficial floodplain values, and enhancement of the natural and beneficial values of wetlands in carrying out programs affecting land use.
37. Executive Order 13186 (Migratory Birds) establishes the responsibilities of federal agencies to protect migratory birds.
38. Secretarial Order 3175 (incorporated into the Departmental Manual at 512 DM 2) requires that if Department of the Interior agency actions might impact Indian trust resources, the agency explicitly address those potential impacts in planning and decision documents, and the agency consult with the tribal government whose trust resources are potentially affected by the federal action.
39. Secretarial Order 3206 (American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act) requires Department of the Interior agencies to consult with Indian tribes when agency actions to protect a listed species, as a result of compliance with the Endangered Species Act, affect or may affect of Indian lands, tribal trust resources, or the exercise of American Indian tribal rights.
40. Executive Order 12548 provides for establishment of appropriate fees for the grazing of domestic livestock on public rangelands and directs that the fee shall not be less than \$1.35 per animal unit month.

Appendix B

**Record of Decision
Northeastern California
and
Northwestern Nevada**

**STANDARDS
for Rangeland Health
and
GUIDELINES
for Livestock Grazing
Management**

Prepared by the Bureau of Land Management
California State Office
June 1999

ABSTRACT**NE California and NW Nevada****Standards for Rangeland Health
and Guidelines for Livestock Grazing Management**

Draft ()

Final()

Record of Decision (X)

United States Department of the Interior, Bureau of Land Management (BLM)

1 Type of Action: Administrative (X) Legislative ()

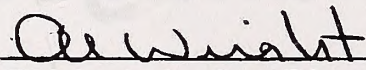
2 Abstract: This is the Record of Decision for the environmental impact statement (EIS) documenting the effects of adopting regional standards for rangeland health and guidelines for livestock grazing management on BLM-administered lands in parts of California and NW Nevada. This Record of Decision covers that part of California and Nevada formerly known as the Susanville District.

The Preferred Alternative described in the final EIS (Alternative 5), with modifications for clarification, has been chosen as the Standards and Guidelines for California. The changes reflected in this Decision are within the scope and analysis of the EIS.

There Standards and Guidelines will be recommended to the Secretary of the Interior for final approval. They will take effect immediately upon that approval.

This document contains the actual Decision establishing Rangeland Health Standards and Guidelines for California and NW Nevada. It includes the following:

- Decision on Plan Amendments
- Standards and Guidelines for NE California and NW Nevada (formerly the Susanville District)
- Implementation
- Assessments and Monitoring

 6.14.99
Al Wright, Acting State Director Date Bureau of Land
Management California State Office

SUMMARY

This is the Record of Decision (Decision) recommending Rangeland Health Standards and Livestock Grazing Management Guidelines for NE California and NW Nevada. These recommendations will be submitted to the Secretary of the Interior (Secretary) for his approval, and will become effective immediately upon that approval.

The Decision amends BLM land use plans in NE California and NW Nevada to include the Standards and Guidelines and directs evaluation of existing, and development of new, Desired Plant Community (DPC) standards to ensure conformance of the DPCs with the Standards.

The Decision selects the Preferred Alternative described in the final EIS (Alternative 5), with minor changes for clarification, as the Rangeland Health Standards and Guidelines to be submitted to the Secretary for his approval.

The Decision describes how the Standards and Guidelines will be implemented and how rangeland health conditions will be monitored to assure achieving the Standards.

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COVER LETTER

ABSTRACT

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Map 2 --Map Showing the RAC Areas -- Central California, Northwestern California, and
Northeastern California and Northwestern Nevada

APPENDICES

1. Implementation

2. Assessments and Monitoring

DECISION

1. INTRODUCTION

There were five alternatives considered and analyzed in the EIS. Alternative 1 consisted of the standards and guidelines developed by the three Resource Advisory Councils (RACs) for their representative areas. Alternative 2 consisted of the state-wide standards developed by BLM, in consultation with representatives from each of the RACs, but without concurrence by the entire RAC membership. The guidelines for Alternative 2 were essentially the same as those for Alternative 1. Alternative 3 was adoption of the national "fall-back" standards and guidelines listed in the regulations. Alternative 4 (the environmentally preferred alternative) was a rapid improvement or rapid recovery alternative developed by BLM, with suggestions from several interest groups. The Standards in Alternative 4 were the same as those in Alternative 2, except for Water Quality; however, the implementation would have occurred much faster than under other alternatives. Alternative 5 was a modified version of Alternative 1, with changes based upon suggestions and new information from the public, the RACs, and BLM.

The Decision is to select Alternative 5, with some minor changes and clarifications, all of which are within the scope of the analysis. This decision will become effective immediately upon approval by the Secretary of the Interior.

This Alternative was selected for a number of reasons, including (1) it meets the requirements of the regulations at 43 CFR 4180.1 and 4180.2 to address the principles of rangeland health; (2) it was based upon and incorporates a large portion of the regional standards and guidelines recommended by the Resource Advisory Council; (3) it incorporates some good suggestions by other agencies and the public; (4) it is based upon sound science as requested repeatedly by the different parties who commented on the process; and (5) it can be implemented within BLM's existing budgets without undue economic impacts to the grazing operators and the surrounding communities.

2. PLAN AMENDMENTS

In accordance with the grazing administration regulations at 43 CFR 4100, existing land use plans (Resource Management Plans and Management Framework Plans) have been examined to determine their compliance with the new regulations and the principles of rangeland health. In most cases, these plans do comply.

The land use plans identified below, as well as allotment management and other activity level plans, are hereby amended to include the standards and guidelines as adopted in this decision. The standards and guidelines will become effective immediately upon approval by the Secretary of the Interior and will be incorporated into the Plans at that time. Where there are plan decisions that are contrary to the new regulations, the principles of rangeland health, and the standards and guidelines, those decisions will be deleted from the plans or amended to comply.

Where "desired plant community" (DPC) objectives have been determined through the BLM planning and NEPA processes, the DPCs will be evaluated to ensure they meet the standards of rangeland health. Where DPCs have not yet been determined for a pasture or allotment, they will be developed through the BLM planning and NEPA processes to meet local and regional management objectives, and the standards of rangeland health.

Each Field Office will make the physical changes to their land use plans prior to the next grazing season. As this is merely plan maintenance, further NEPA analysis will not be necessary to complete this administrative action.

LAND USE PLAN	PLAN DATE	FIELD OFFICE
Tuledad / Home Camp Management Framework Plan (MFP)	1978	Surprise -- south part
Cowhead / Massacre MFP	1980	Surprise -- north part
CAL / NEVA MFP	1982	Eagle Lake -- NE part
Willow Creek MFP	1983	Eagle Lake -- NW part
Honey Lake MFP	1983	Eagle Lake -- south part
Eagle Lake MFP Amendment	1990	Eagle Lake -- Eagle Lake area
Alturas Resource Management Plan	1983	Alturas -- most of area
Ash Valley Amendment		Alturas -- part only
Mount Dome MFP	1981	Alturas -- part only
Redding (old) MFP	1983	Alturas -- part only

3. STANDARDS AND GUIDELINES for RANGELAND HEALTH in NORTHEASTERN CALIFORNIA and NORTHWESTERN NEVADA

The Preferred Alternative described in the final EIS (Alternative 5), with minor changes for clarification, has been chosen as the Standards and Guidelines for Northeastern California and Northwestern Nevada. The changes reflected in this Decision are within the scope and analysis of the EIS. These Standards and Guidelines will take effect immediately upon their approval by the Secretary of the Interior.

These standards and guidelines were developed for, and are hereby adopted for, that part of northeastern California and northwestern Nevada formerly known as the Susanville District.

Preamble

Healthy rangelands contribute to the social and economic well being of rural communities in Northeastern California and Northwestern Nevada, and they provide, over the long term, the most reliable harvest of rangeland resources. The objective of rangeland resource planning is to integrate BLM resources with other resources to achieve the mandate of multiple-use and sustained yield management of renewable resources in an environmentally sound and cost-effective manner.

The **Standards** of rangeland health are expressions of physical and biological condition or degree of function required for healthy, sustainable rangelands. The Standards are applied on a landscape scale. Some standards may not apply to all acres. For example, a mosaic of vegetation types and age classes may produce the diversity associated with healthy rangelands; however, some individual vegetation communities within the mosaic may lack diversity.

The Standards always relate to the capability or potential of a specific site. The land will not be expected to produce vegetation or support habitats not attainable due to climate, soils, or other limiting attributes. In instances where site capability or potential has changed due to human-caused or natural disturbance, recognition will be given to the modified capability when setting or assigning a standard to (for) the site. The Standards are designed to establish the threshold for healthy rangelands. In some

circumstances, an exception to the Standards or Guidelines may be necessary or unavoidable; however, **these instances should be under extreme conditions only** and fully justified (documented) in order to be acceptable.

The **Guidelines** for grazing management are the types of grazing management methods and practices determined to be appropriate to ensure that standards can be met or that significant progress can be made toward meeting the standard. The Guidelines were designed to provide direction, yet offer flexibility for implementation through activity plans and terms and conditions for grazing permits. The Bureau of Land Management (BLM) must operate within the constraints of other regulatory requirements that may affect how standards and guidelines are applied for livestock grazing, for example the Wild Free-Roaming Horse and Burro Act (1971).

STANDARD 1: UPLAND SOILS

Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate and landform, and exhibit functional biological, chemical and physical characteristics.

Meaning that:

Precipitation is able to enter the soil surface and move through the soil profile at a rate appropriate to soil type, climate, and landform; the soil is adequately protected against human-caused wind or water erosion; and the soil fertility is maintained at, or improved to, the appropriate level.

Criteria to Meet Standard:

- * Ground cover (vegetation, litter, and other types of ground cover such as rock fragments) is sufficient to protect sites from accelerated erosion.
- * Evidence of wind and water erosion, such as rills and gullies, pedestaling, scour or sheet erosion, and deposition of dunes is either absent or, if present, does not exceed what is natural for the site.
- * Vegetation is vigorous, diverse in species composition and age class, and reflects the potential natural vegetation or desired plant community for the site.

STANDARD 2: STREAMS

Stream channel form and function are characteristic for the soil type, climate, and landform.

Meaning that:

Channel gradient, pool frequency, width to depth ratio, roughness, sinuosity, and sediment transport are able to function naturally and are characteristic of the soil type, climate, and landform.

Criteria to Meet Standard:

- * Gravel bars and other coarse textured stream deposits are successfully colonized and stabilized by woody riparian species.
- * Stream bank vegetation is vigorous and diverse, mostly perennial, and holds and protects banks during high stream flow events.
- * The stream water surface has a high degree of shading, resulting in cooler water in summer and reduced icing in winter.
- * Portions of the primary floodplain are frequently flooded (inundated every 1-5 years).

STANDARD 3: WATER QUALITY

Water will have characteristics suitable for existing or potential beneficial uses. Surface and groundwater complies with objectives of the Clean Water Act and other applicable water quality requirements, including meeting the California and Nevada State standards, excepting approved variances.

Management Objective: For water bodies, the primary objective is to maintain the existing quality and beneficial uses of water protect them where they are threatened, and restore them where they are currently degraded. This objective is of even higher priority in the following situations:

- a. where beneficial uses of water bodies have been listed as threatened or impaired pursuant to Section 303(d) of the Federal Clean Water Act;
- b. where aquatic habitat is present, has been present, or is potentially present for Federal threatened or endangered, candidate, and other special status species dependent on water resources; and
- c. in designated water resource sensitive areas such as riparian and wetland areas.

Meaning That:

BLM will:

Maintain the physical, biological, and chemical integrity of waters flowing across or underlying the lands it administers.

Protect the integrity of these waters where it is currently threatened.

Insofar as is feasible, restore the integrity of these waters where it is currently impaired.

Not contribute to pollution and take action to remedy any pollution resulting from its actions that violates California and Nevada water quality standards, Tribal water quality standards, or other applicable water quality requirements (e.g., requirements adopted by SWRCB or RWQCB in California, or U.S. EPA pursuant to Section 303(d) of the Clean Water Act or the Coastal Zone Reauthorization Act). Where action related to grazing management is required, such action will be taken as soon as practicable but not later than the start of the next grazing year (in accordance with 43 CFR 4180.1).

Be consistent with the non-degradation policies as identified by the States.

Develop and execute a Management Agency Agreement with the States of California and Nevada for the efficient protection of water quality associated with BLM's management.

Work with the States' water quality administrative agencies and U.S. EPA to establish appropriate beneficial uses for public waters, establish appropriate numeric targets for 303(d) listed water bodies, and implement the applicable requirements to ensure that water quality on public lands meets the objectives for the designated beneficial uses of the water.

Develop and implement Best Management Practices (BMPs) approved by the States to protect and restore the quality and beneficial uses of water, and monitor both implementation and effectiveness of the BMPs. These BMPs will be developed in full consultation, coordination, and cooperation with permittees and other interests.

State or Tribal approved variances or exceptions to water quality standards may be applicable within their Basin Plans for specific types of activities or actions. BLM will follow State or Tribal administrative procedures associated with variances.

As Indicated By:

- * The following do not exceed the applicable requirements for physical, chemical, and biological constituents including, but not limited to: temperature, nutrients, fecal coliform, turbidity, sediment, dissolved oxygen, aquatic organisms and plants (e.g., indicator macroinvertebrates, fish, algae, and plants).
- * Achievement of the standards for riparian, wetlands, and water bodies.
- * Monitoring results or other data that show water quality is meeting the standard.

STANDARD 4: RIPARIAN and WETLAND SITES

Riparian and Wetland areas are in properly functioning condition and are meeting regional and local management objectives.

Meaning that:

The riparian and wetland vegetation is controlling erosion, stabilizing stream banks, shading water areas to reduce water temperature, filtering sediment, aiding in floodplain development, dissipating energy, delaying floodwater and increasing recharge of ground water that is characteristic for these sites. Vegetation surrounding seeps and springs is controlling erosion and reflects the potential natural vegetation for the site.

Criteria to Meet Standard:

Riparian vegetation is vigorous and mostly perennial, and diverse in species composition, age class and life form sufficient to stabilize stream banks and shorelines.

Riparian vegetation and large woody debris are well anchored and capable of withstanding high stream flow events.

Negligible accelerated erosion as a result of human related activities is evident.

Age class and structure of woody riparian and wetland vegetation are appropriate for the site.

Exceptions and Exemptions to Standard 4 (where Standard 4 is not applicable)

- Structural facilities constructed for livestock/wildlife water or other purposes are not natural wetland and/or riparian areas. Examples are: water troughs, stock ponds, flood control structures, tailings ponds, water gaps on fenced or otherwise restricted stream corridors, etc.

STANDARD 5: BIODIVERSITY

Viable, healthy, productive and diverse populations of native and desired plant and animal species, including special status species, are maintained.

Meaning that:

Native and other desirable plant and animal populations are diverse, vigorous, and able to reproduce, and support nutrient cycles and energy flows.

Criteria to Meet Standard:

- * Wildlife habitats include seral stages, vegetation structure, and patch size to promote diverse and viable wildlife populations.
- * A variety of age classes is present for most species.
- * Vigor is adequate to maintain desirable levels of plant and animal species to ensure reproduction and recruitment of plants and animals when favorable events occur.
- * Distribution of plant species and their habitats allow for reproduction and recovery from localized catastrophic events.
- * Natural disturbances such as fire are evident, but not catastrophic.
- * Non-native plant and animal species are present at acceptable levels.
- * Habitat areas are sufficient to support diverse, viable, and desired populations and are connected adequately with other similar habitat areas.
- * Adequate organic matter (litter and standing dead plant material) is present for site protection and decomposition to replenish soil nutrients and maintain soil health.

GUIDELINES FOR LIVESTOCK GRAZING

The following guidelines are meant to apply to one or more of the standards for rangeland health.

Guideline 1: Adequate stubble will be present on all stream-side areas at the end of the growing season, or at the end of the grazing season if grazing occurs after fall dormancy. The residual or regrowth should provide sufficient herbaceous forage biomass to meet the requirement of plant vigor maintenance, bank protection, and sediment entrapment. Stubble height thresholds will be set on a site-specific basis, except for those allotments to which Guideline 16 applies (see Guideline 16 for an explanation of when Guideline 16 applies).

Utilization of stream-side herbaceous and woody plants should be limited to a specified amount of the current growth, and/or livestock should be removed to allow sufficient time for plant regrowth.

- a. Late season use (summer or fall grazed pastures) requires more restrictive utilization based on site specific situations.
- b. Special situations such as fragile fisheries habitats or easily eroded stream banks may require more restrictive utilization thresholds.
- c. Hoof action impacts or chiseling on stream banks will not exceed specified thresholds so that stream bank stability is maintained or improved.

Guideline 2: Desired seral states will be determined through the Allotment Management Plan development process; generally the goal will be to achieve advanced ecological status in the riparian zone, except where site-specific objectives call for lower ecological status (such as meadows in important sage grouse habitat, where the objective might call for a pattern of meadows in different seral stages from mid-seral to the potential natural community). These site-specific objectives will be determined through allotment management plans or other plans and analyzed through the NEPA process.

Guideline 3: Periods of rest from livestock grazing or other avoidable disturbances must be provided during/after periods of stress on the land (e.g.: fire, flood, drought) and during critical times of plant growth.

Guideline 4: Plans for grazing on any allotment must consider other uses (recreation, archaeological sites, wildlife, horses and burros, mineral resource extraction, etc.) and be coordinated with the other users of public lands so that overall use does not detract from the goal of achieving rangeland health.

Guideline 5: Intensity, frequency, season-of-use, and distribution of grazing shall provide for growth and reproduction of desired plant species and the achievement of the potential natural vegetation or desired plant community.

Guideline 6: Grazing permits will include site-specific, measurable terms and conditions.

Guideline 7: Design and work towards implementation of a grazing management strategy for livestock for each grazing unit (pasture) within I (Improvement) and M (Maintenance) category allotments, to maintain or improve rangeland health. This may consist of, but not be limited to, season-of-use, rotation, or by setting utilization levels for desirable plants. Each management plan implemented will incorporate the factors necessary to maintain the health of desirable plants.

Guideline 8: Determination of grazing use by livestock must provide for the habitat requirements of fish and wildlife.

Guideline 9: Grazing management practices must sustain biological diversity across the landscape. A mosaic of seral stages, vegetation corridors, and minimal habitat fragmentation must be maintained.

Guideline 10: Take aggressive action to reduce the invasion of undesirable exotic plant species into native plant communities. The spread of noxious weeds will be controlled through appropriate methods such as grazing management, fire management, and other management practices.

Guideline 11: Prescribed fire and (natural) prescribed fire will be utilized to promote a mosaic of healthy plant communities and vegetative diversity.

Guideline 12: Grazing and other management practices shall take advantage of transitional opportunities (e.g., drought, flood, fire) to enhance or establish populations of desirable tree, shrub, herbaceous and grass species. Utilization levels will be established for desired seedlings, saplings, and/or mature plants to promote their presence in the plant community.

Guideline 13: Development of springs, seeps, and other water related projects shall be designed to promote rangeland health. Wherever possible, water sources shall be available year long for use by wildlife.

Guideline 14: Apply the management practices recognized and approved by the States of California and Nevada as Best Management Practices (BMPs) for grazing related activities to protect and maintain water quality.

Guideline 15: In watersheds draining into water bodies that have been listed or are proposed for listing as having threatened or impaired beneficial uses, and where grazing activities may contribute to the pollutants causing such impairment, the management objective is to fully protect, enhance, and restore the beneficial uses of the water.

Guideline 16: Utilization Levels to be Applied to those Allotments Not Meeting or Making Significant Progress Toward Meeting the Standards

If monitoring or documented observation indicates that one of more of the standards is not being met, and if significant progress is not being made toward meeting all of those standards that are not being met, and if there is evidence that current grazing practices are causing or contributing to this unsatisfactory condition, then the following utilization levels will be applied.

Utilization of key upland herbaceous species

UTILIZATION GUIDELINES (adapted from Holechek 1988 and Holechek et al. 1998)	
Community Type	Percent of Use of Key Herbaceous Species
Salt desert shrubland	25-35
Semi-desert grass and shrubland	30-40
Sagebrush grassland	30-40
California annual grassland	50-60*
Perennial grass communities within the California annual grassland vegetation type	30-40
Coniferous forest	30-40
Mountain shrubland	30-40
Oak woodland	30-40
Pinyon-juniper woodland	30-40
Alpine tundra	20-30

* Residual dry matter (RDM) guidelines will be used instead of these utilization levels for management of annual species in the California annual grassland. These RDM levels correspond approximately with these utilization levels. The RDM levels given in the table in the Final EIS under Alternative 5, Ukiah RAC Recommended Standards and Guidelines (Section 2.92), will be used for those few annual allotments within the area covered by this ROD.

Utilization of key upland browse species

There will be no more than 20 percent utilization of annual growth on key browse species prior to October 1 within identified deer concentration areas. These concentration areas are those areas within mule deer habitat where mule deer numbers are most likely to be concentrated during the winter season (winter season normally occurs from December 16 through March 31). These areas have been identified through State Fish and Game Agency fall and spring counts over a period of several years. Maps of these deer concentration areas are on file at the BLM Alturas Field Office.

Utilization of key riparian species

A 4-6 inch minimum stubble height will remain at the end of the growing season in most riparian areas.

There should be no more than 20% utilization on key riparian trees and shrub species in those areas where the presence of woody riparian species is necessary to meet standards.

Application of the above utilization levels

These utilization guidelines will be applied to those areas of the allotment responsible for the determination that the allotment is not meeting the standards. For example, an allotment has 10 riparian areas, of which 6 have been determined to be in proper functioning condition and 4 have been determined to be functional-at risk. The utilization guidelines for riparian species given above would be applied to the 4 riparian areas that are functional-at risk, not to the 6 that are in proper functioning condition (although *all* of the riparian areas will be managed to meet the standards). Also, only those guidelines that are applicable to making progress toward meeting the standards that are not being met would be applied. For example, if only riparian standards are not being met, then only the guidelines applicable to utilization and stubble height of riparian vegetation would be applied.

These utilization levels will be implemented unless and until a current site-specific analysis is completed and new utilization levels are developed for specific allotments and documented in allotment management plans, other management plans, and/or in terms and conditions of grazing permits/leases. New site-specific utilization levels that are developed may be more restrictive than the guidelines presented above, consistent with achieving the desired resource conditions (as prescribed in land use plans and activity plans) and progress toward meeting the standards.

Implementation of this guideline

1. Uplands (including perennial grass and browse communities).

Guideline 16 will be implemented only on those upland areas that are responsible for the determination that the allotment is not meeting one or more of the standards and for which lighter utilization would be expected to move these areas toward meeting the standard(s).

Management changes (such as changes in season of use, timing, duration, and/or intensity; rotational grazing; fencing; herding; and/or adjustments in stocking rates) will be implemented if utilization guidelines on the average of the upland key areas across the pasture (or allotment if there is only one pasture) are exceeded for 2 consecutive years or in any 2 years out of every 5 years. In addition, at least 70% of upland key areas on the pasture (or allotment) are not to exceed maximum utilization guidelines in most years. Because of the potential long-term damage to perennial grass species associated with severe grazing, severe grazing use (>70% utilization) in any upland key area in any year will result in a management change the following year. If any particular key area fails to meet the guidelines for more than 2 consecutive years, then management action will be taken to remedy the problem in the area of the allotment that key area represents. The average (mean) utilization on key species will be estimated at each key area and used to determine if the guidelines have been met. There are indications that the median may be a better statistic to use than the mean; we will calculate both statistics from the same data sets and make a determination on which statistic to use after examining the data over a period of a few years. See Appendix 20 of the Final EIS for further discussion on this issue.

The management options to be implemented to meet this guideline will be determined in full consultation, cooperation, and coordination with affected permittees and other interests.

For allotments not meeting or making significant progress toward meeting the standards (and for which lower utilization levels of perennial upland species would be expected to help move these allotments toward the standards), utilization data already in hand will be used to determine whether a management change is necessary. Thus, for example, if utilization on a particular key area has exceeded the thresholds for the two years previous to the approval of these standards and guidelines, a management change will be implemented prior to the first grazing year following this approval.

In addition to implementing management changes that are expected to bring utilization levels within threshold values, close monitoring will follow to ensure that the grazing use levels are not exceeded during the grazing period following the management changes. If utilization levels are exceeded or expected to be exceeded during this period, a reduction or curtailment of further grazing in the area represented by the key area will be required for the remainder of the grazing season. In addition, further management changes will be implemented prior to the start of the next grazing season to bring utilization levels within thresholds.

2. Riparian areas (including herbaceous and woody plant communities).

Guideline 16 will be implemented only on those riparian areas that are nonfunctional or functional--at risk and lighter utilization levels would be expected to move these areas toward meeting the standards. The guideline will apply where the riparian area in a healthy state has the capability to produce vegetation of the prescribed height. The stubble heights will be measured at the end of the growing season to determine if the guideline has been met. Management changes (such as changes in season of use, timing, duration, and/or intensity; rotational grazing; fencing; herding; and/or adjustments in stocking rates) will be implemented if stubble heights on the average of the key riparian areas across the pasture (or allotment if there is only one pasture) fall below the guidelines for 2 consecutive years or in any 2 years out of every 5 years. In addition, at least 70% of riparian key areas on the allotment are to exceed minimum stubble heights in most years. If any particular key area fails to meet the guidelines for more than 2 consecutive years, then management action will be taken to remedy the problem in the area of the allotment that key area represents.

Because stream banks may be inadequately protected by heavy use in any one year and because stubble heights below 3 inches result in cattle shifting their preference to shrubs, stubble heights below 2 inches in any one year will require a management change in the following year.

The mean stubble height on key riparian species will be estimated at each riparian key area and used to determine if the guidelines have been met. There are indications that the median may be a better statistic to use than the mean; we will calculate both statistics from the same data sets and make a determination on which statistic to use after examining the data over a period of a few years. See Appendix 20 of the Final EIS for further discussion on this issue.

For allotments not meeting or making significant progress toward meeting the standards (and for which higher stubble would be expected to help move these allotments toward the standards), stubble height data already in hand will be used to determine whether a management change is necessary. Thus, for example, if stubble heights on a particular key area have fallen below the thresholds for the two years previous to the approval of these standards and guidelines, a management change will be implemented prior to the first grazing year following this approval. In addition to implementing management changes that are expected to bring stubble heights within threshold values, close monitoring will follow to ensure that the grazing use levels are not exceeded during the grazing period following the management changes. If utilization levels are exceeded or expected to be exceeded during this period, a reduction or curtailment of further grazing in the area represented by the key area will be required for the remainder of the grazing season. In addition, further management changes will be implemented prior to the start of the next grazing season to bring utilization levels within thresholds.

The management options to be implemented to meet this guideline will be determined in full consultation, coordination, and cooperation with affected permittees and other interests.

If reductions in permitted use are required: Any reductions in permitted use required as a result of implementing this guideline will be held in suspension and apportioned back to the permittee(s) or lessee(s) authorized to graze in the affected allotment if rangeland health improves to the extent that the authorized officer determines additional forage to be available (see Implementation, Appendix 1, for more information on this).

Guideline 17: Rangeland monitoring to determine utilization of forage resources and trend of rangeland health will be conducted in each allotment based on current accepted practices and techniques as directed in the Interagency Technical References: *Utilization Studies and Residual Measurements* (BLM et al. 1996b) and *Sampling Vegetation Attributes* (BLM et al. 1996a). Monitoring methodologies will be applicable to local conditions and developed in consultation with permittees and interested publics.

To the extent possible, monitoring methods will be simple and easily accomplished. BLM, permittees, or others will do the monitoring. BLM will be responsible for ensuring that the monitoring is conducted in accordance with currently accepted practices and techniques, for analyzing and interpreting the data collected (in consultation, coordination, and cooperation with affected permittees and other interests), and for the accuracy of the data.

Existing key areas will be used where they exist. New key areas will be selected in full consultation, coordination, and cooperation with affected permittees and other interests. BLM will periodically review established key areas to determine if they continue to be appropriate to management. This review will be done in full consultation, coordination, and cooperation with affected permittees and other interests. If there is disagreement between BLM, permittees, and other interests over the location of key areas, the RAC will be asked for ideas on resolution. The final decision on the placement of key areas, however, rests with BLM.

BLM, in cooperation with other agencies, including Cooperative Extension, the Natural Resources Conservation Service, and the Forest Service, will provide training for permittees and other interested parties on rangeland monitoring methods.

4. IMPLEMENTATION

BLM will fully implement the grazing standards and guidelines as directed in the rulemaking. The rule states that, "The authorized officer shall take appropriate action as soon as practicable but not later than the start of the next grazing year upon determining that grazing practices or levels of grazing use on public lands are significant factors in failing to achieve the standards and conform to the guidelines...."(43 CFR 4180.2(c)).

Determination of the "appropriate action," and the actual scheduling of the implementation, will be the responsibility of the local Field Managers. However, it will be done using the priority system described in Appendix 1.

5. ASSESSMENTS and MONITORING

Field Offices will conduct assessments of all allotments according to the priority described in Appendix

1. These assessments will be done using an interdisciplinary approach and the findings and reasons for the findings will be documented. The format and content of this documentation will be left to the discretion of the individual Field Manager. (Examples are in the Final EIS.)

Field Offices will monitor allotments according to the priority described in Appendix 1. The monitoring will be done using an interdisciplinary approach, using methods described in Appendix 2. Also see Guideline 17. Both assessments and monitoring will be done in consultation, coordination, and cooperation with permittees and other interests.

Rangeland health conditions will be reported annually for each grazing allotment. This information will include the determinations of rangeland health conditions through assessments and monitoring and the progress made towards meeting rangeland health standards. Specifically, for each allotment an identification will be made of what standards, if any, are not met or where significant progress is not being made toward meeting the standard; what progress has been made regarding determining and implementing needed management changes; and the results of making the management changes as determined from monitoring information. Additionally, any changes in the management categories of the allotments will be identified and an explanation of the reasons for the change will be made.

The above information will be gathered at the Field Office which administers the respective allotment(s). A summary of this information will be consolidated for all of the allotments in the state (exclusive of the California Desert District) and made available to the public annually.

6. PUBLIC INVOLVEMENT and RESPONSE to PROTESTS

BLM has had extensive public involvement throughout the process of developing the Standards and Guidelines. Early phases of this involvement were described in the Draft EIS, and in Chapter 5 of the Final EIS. Further, we have consulted extensively with the three Resource Advisory Councils (RAC) on content and wording of the Standards and Guidelines.

As stated in the Final EIS, “following the comment period on the draft EIS, the RAC members were sent copies of all of the comment letters. The RACs discussed the comments and the draft EIS in their meetings. Representatives of the three RACs then met with BLM staff in a workshop setting and made recommendations for modification of their original proposals.”

Comments made by the public following the Draft EIS were individually analyzed by BLM, and responded to in the Final EIS. The Proposed Action (Alternative 5) in the Final EIS was based upon the original RAC proposals, with changes suggested by the RACs and by BLM, based upon analysis of the public comments. There were several meetings with the Susanville RAC and other interested parties prior to issuing the Final EIS because there were items in the Standards and Guidelines that caused concern to RAC members and ranchers in NE California and NW Nevada.

Following release of the Final EIS, BLM received 5 protests, all of which applied to Northeastern California and Northwestern Nevada (3 of these applied only to this area, while the other 2 applied to this area and to the rest of the EIS area). The major concerns were that there were changes made in the Final EIS that the public had not been allowed to review in the Draft; that the water quality guidelines were inappropriate; that utilization guidelines should not be imposed throughout the region; that there was no “no grazing” alternative; and that the Bureau does not have enough staff to implement the Standards and Guidelines.

As a result of these protests, BLM has added some language to this ROD to clarify how the standards and guidelines will be implemented. However, no substantive changes have been made to the Northeastern California and Northwestern Nevada Standards and Guidelines from that contained in the Final EIS. Based on the clarification language, three of the protestors subsequently withdrew their protests. The remaining two protests were dismissed by the Director of BLM, who sent letters to the two protestors explaining the reasons for the dismissals.

APPENDIX 1: IMPLEMENTATION

The fallback standards (43 CFR 4180.2(f)(1)) have been in effect in since August 12, 1997. An initial screening of allotments was made, based on existing information, to determine the status of each allotment with respect to meeting the fallback standards. Each allotment was placed into one of four categories as follows:

- Category 1: Areas where one or more standards are not being met, or significant progress is not being made toward meeting the standards(s), and livestock grazing is a significant contributor to the problem.
- Category 2: Areas where all standards are being met or significant progress is being made toward meeting the standard(s).
- Category 3: Areas where the status for one or more standards is not known, or the cause of the failure to not meet the standard(s) is not known.
- Category 4: Allotments where one or more of the standards are not being met or significant progress is not being made toward meeting the standards due to causes other than (or in addition to) livestock grazing activities. (Those allotments where current livestock grazing is also a cause for not meeting the standards is included in Category 1 in addition to this category.) The authorized officer should take appropriate action based on regulation or policy; however, these actions not related to livestock grazing are outside the scope of this implementation plan and will not be addressed in this document.

An assumption has been made by the BLM field managers that, with few possible exceptions, the implementation needed for the regulatory fallback standards and guidelines will essentially be the same as for any anticipated set of final approved standards and guidelines implemented pursuant to this Record of Decision (ROD). Consequently, the categorization of allotments under the standards in this ROD is likely to be the same as the categorization under the fallback standards and guidelines. Existing allotment assessments and their resulting determinations as to category will be reviewed to ensure that the determination is correct under the standards set in place by this ROD.

New allotment assessments, reviews of existing allotment assessments, and determination of allotment category will be conducted in full consultation, coordination, and cooperation with permittees and other interests.

We intend to conduct rangeland health assessments on all allotments within the next 5 years. First priority for these assessments will be given to those allotments where we already know or suspect one or more of the standards are not being met. These include those allotments placed in Category 1 under the fallback standards and those allotments currently in Category 3 that we have reason to believe may not be meeting standards. After these allotments have been assessed, the remaining allotments will be assessed using the BLM I, M, and C priority management system, with first priority to I, second to M, and last to C.

For those allotments where the standards are not being met (Category 1), management actions will be implemented to correct the situation prior to the next grazing season turn-out period for the allotment. The management options will be determined in full coordination, consultation, and cooperation with permittees and other interests.

Monitoring will be conducted to evaluate the progress towards improving rangeland health and to evaluate the success of the specific management measures applied (see Guideline 17).

APPLICATION OF GUIDELINES

Once the guidelines are approved by the Secretary of the Interior, they will be applicable to the management of livestock grazing on all allotments not meeting the health standards. Some guidelines will be applicable regardless of the specific rangeland health condition, as they are designed to help protect and sustain rangeland health and are not intended to be applied only to remedy problems. Many of the guidelines will need to be more specifically identified and then applied as terms and conditions of a permit or lease, based upon the specific needs for meeting rangeland health standards. There will be instances where specific terms and conditions will be applied to grazing use authorizations for reasons other than those directly related to rangeland health, such as to accommodate other resource needs and land uses or to meet administrative requirements. Examples of this may include protecting cultural resource sites, requiring a specific breed of livestock to be used that is compatible with the needs of other permittees or lessees using the same allotment, or for meeting various regulatory requirements for grazing administration purposes. In some instances, existing terms and conditions will be carried over from previously made plans and commitments, such as those identified in allotment management plans or coordinated management plans. In these instances, the terms and conditions may or may not be related to rangeland health needs.

Any terms or conditions specified for a permit or lease must be consistent with and support appropriate BLM land use plans or other land use plans applicable to the public lands. BLM will also adhere to requirements such as those identified as terms or conditions from a biological opinion for protecting the habitat of a plant or animal under the Endangered Species Act.

Terms and conditions will be applied to grazing permits, leases, or other grazing authorizations as the authorized officer (Field Manager) determines the need. The determination of what terms and conditions will be applied will be made in full consultation, coordination, and cooperation with the respective permittees/lessees and other interested parties involved in the particular allotment. The same process will be used for making needed changes to any existing terms and conditions. Information from assessments and evaluations of monitoring data will be used to determine the management changes needed. Management options that would be expected to move allotments toward meeting the standards will be determined in full coordination, consultation, and cooperation with permittees/lessees and other interested parties.

Alternative management changes will be considered and evaluated through the NEPA process prior to making final determinations. It is anticipated that in most instances, the terms and conditions will be identified cooperatively and be agreed upon by the affected permittee/lessee and all interested parties. Where an agreement cannot be reached, then a formal decision (which is appealable) will be issued.

If reductions in permitted use are necessary to achieve the standards or meet the guidelines, the animal unit months (AUMs) by which the permitted use is reduced will be held in suspension. Once the authorized officer determines that rangeland health has recovered to an extent that all or part of the suspended permitted use can be restored, this suspended permitted use shall first be apportioned in satisfaction of suspended permitted use to the permittee(s) or lessee(s) authorized to graze in the allotment in which the forage is available (this is in accordance with 43 CFR 4110.3-1(b)).

REPORTING PROGRESS IN RANGELAND HEALTH ACHIEVEMENTS

Rangeland health conditions will be reported annually for each grazing allotment. This information will include the determinations of rangeland health conditions through assessments and monitoring and the progress made towards meeting rangeland health standards. At a minimum the report will identify, by allotment: (1) what standards, if any, are not being met; (2) whether significant progress is being made toward meeting those standards that are not currently being met; (3) the magnitude of those standards not being met, in terms such as acres, miles of stream, number of sites, etc.; (4) the progress that has been made in determining and implementing needed management changes; and (5) the results of making the management changes as determined from monitoring and assessment information. Additionally, any changes in the management categories of the allotments will be identified, accompanied by an explanation of the reasons for the change.

The above information will be gathered at the field office which administers the respective allotment(s). A summary of this information will be consolidated for all of the allotments within the EIS area and made available to the public annually.

Tables were provided in the Final EIS that showed all allotments in the State and the category to which they were assigned in 1997. Since that list was compiled, management changes have been implemented and additional assessment and monitoring work has been completed that makes those lists obsolete. When the annual report is compiled each year, an updated list of all allotments, by category, will be provided as part of the report.

Throughout all processes the public is encouraged to participate in the identification of rangeland health conditions, developing management remedies, monitoring results, and reviewing progress towards achieving rangeland health standards.

APPENDIX 2: ASSESSMENT AND MONITORING

Assessment to Determine if Allotments are Meeting Standards

“Assessment” means the analysis, synthesis, and interpretation of information, including monitoring data, to characterize the health of an allotment or other management unit. Gathering new information in the field may be necessary as part of the assessment process. “Monitoring” means the periodic gathering of information.

In some cases, quantitative monitoring data, gathered over a period of years, may be essential to determine whether an area meets the standards and whether livestock grazing is a significant factor contributing to a failure to meet the standards. However, quantitative monitoring data is not always required to make these determinations nor to implement actions to improve grazing management. The preamble to the 1995 grazing regulations (BLM 1995) states that managers may “use a variety of information, including monitoring records, assessments, and knowledge of the locale.” The 1995 regulations also require the manager to “reduce permitted grazing use or otherwise modify management practices...when monitoring or field observations show grazing use or patterns of use are not consistent with the provisions of 43 CFR subpart 4180” (43 CFR 4110.3-2(b); subpart 4180 includes the standards and guidelines). Changes in permitted use are to be “...supported by monitoring, field observation, ecological site inventory, or other data acceptable to the authorized officer.” Therefore, actions needed to improve grazing management in order to comply with guidelines or meet standards should not be delayed solely because monitoring data are lacking. Rangelands will not be allowed to deteriorate while prolonged monitoring studies are conducted, when reliable indicators of rangeland health demonstrate a need for corrective action.

Assessments should employ the minimum information needed to determine whether the standards are being met and whether livestock grazing is a significant factor in failing to meet the standards. All resource information or data collected should be tied directly to the standards, guidelines, or resource objectives.

Field Offices will conduct assessments of all allotments according to the priority described in Appendix

1. These assessments will be done using an interdisciplinary approach, and the findings and reasons for the findings will be documented. The format and content of this documentation will be left up to individual Field Managers, but the form used by the Eagle Lake Field Office (Appendix 24 in the Final EIS) is one example of the type of documentation that could be employed.

The term “assessment,” when used by itself, has the meaning described above; that is, it considers all available information, whether from inventory, monitoring, or qualitative assessments. “Qualitative assessment” refers to a particular method used to rapidly assess whether allotments or areas within allotments are meeting standards. The Proper Functioning Condition (PFC) procedure is the qualitative assessment method that is applied to riparian/wetland areas (BLM 1993b and 1994). The Qualitative Procedure to Assess Rangeland Health (Appendix 25 in the Final EIS) is the qualitative method that will be applied to upland rangelands. The use of these procedures, and their relationship to monitoring, will be discussed in more detail below.

Application of Traditional Rangeland Monitoring to Assessing Whether Standards are Being Met

Many rangeland monitoring studies have been in place and read on a regular basis by BLM personnel in California for many years. These studies involve using qualitative or quantitative procedures, or both, and often are directed at determining the condition and trend of key species in key areas. The basic types of studies, as well as the use of the key species and key area approach, are described in Chapter 3, Section 3.2.5, of the Final EIS. The purpose of these studies has primarily been to determine if management objectives relative to particular grazing allotments are being met or if the trend is toward meeting these objectives. For example, a management objective might be to increase the frequency of a key species such as squirreltail (*Elymus elymoides* ssp. *elymoides*) by 10% in Pasture A of Allotment Z in 5 years. Some method of frequency monitoring is then set up in one or more key areas in Pasture A and read on a regular basis (this could be annually but might be once every five years; in this example the frequency of monitoring would have to be at least every five years). In another example, the objective might be to increase the basal cover of the key species bluebunch wheatgrass (*Pseudoregneria spicata* ssp. *spicata*) in Pasture B of Allotment X by 5 percent over the next 6 years. A method of monitoring that measures cover is then set up in one or more key areas of Pasture B and read on a regular basis (this could be annually or on some other schedule, but must be at least every 6 years).

Management objectives have not always been directed at key species. Objectives to increase the total vegetation cover on particular pastures or allotments have also been applied, as well as objectives to decrease the cover of shrubs or trees. In both of these examples, monitoring methods are chosen that measure or estimate cover. These methods might be quantitative in nature or qualitative; the latter might involve taking photographs, either on the ground or aerially.

A second monitoring objective of traditional rangeland monitoring has been to determine the “condition and trend” of rangelands. The condition is determined by comparing the current species composition and production of a given ecological site to the species composition and production of the potential natural community of that site (see Chapter 3, Section 3.3.3 in the Final EIS for a more complete description of the process).

Trend is recorded as upward, downward, or static, based on whether species composition and production are moving toward, away, or not at all, respectively, from the potential natural community. Ecological site inventory (ESI) is used to determine condition at any one point in time. A second ESI can then be used to determine trend; other monitoring studies, however, can also be used for this purpose, if they yield information on species composition.

Although much of the monitoring currently is being conducted will have applicability to determining the effectiveness of implementation of the rangeland standards, some old methods will have to be modified and new methods introduced. This is because the standards require monitoring of certain rangeland attributes that are not assessed under current methodology.

Table 1 is a list of rangeland attributes that may be assessed in order to determine whether standards are being met.

Table 1. List of rangeland attributes that may be assessed in order to determine whether standards are being met, along with the actual wording of the indicator(s) to which each attribute applies (parentheses following each indicator show the standard to which it applies). Several indicators apply to more than one attribute and therefore are listed under each of the appropriate attributes.

1. Ground cover a. "Gravel bars and other coarse textured stream deposits are successfully colonized and stabilized by woody riparian species" (Streams) b. "Stream bank vegetation is vigorous and diverse, mostly perennial, and holds and protects banks during high stream flow events" (Streams) c. "Ground cover (vegetation, litter, and other types of ground cover such as rock fragments) is sufficient to protect sites from accelerated erosion" (Soils) 2. Litter/residual dry matter "Adequate organic matter (litter and standing dead plant material) is present for site protection and decomposition to replenish soil nutrients and maintain soil health" (Biodiversity) 3. Plant species diversity a. "Vegetation is vigorous, diverse in species composition and age class, and reflects the potential natural vegetation or desired plant community for the site" (Upland Soils) b. "Stream bank vegetation is vigorous and diverse, mostly perennial, and holds and protects banks during high stream flow events" (Streams) c. "Riparian vegetation is vigorous and mostly perennial, diverse in species composition, age class and life form sufficient to stabilize stream banks and shorelines." (Riparian and Wetland) d. "Riparian vegetation and large woody debris are well anchored and capable of withstanding high stream flow events" (Riparian and Wetland) e. "Habitat areas are sufficient to support diverse, viable, and desired populations and are connected adequately with other similar habitat areas" (Biodiversity) 4. Plant vigor a. "Vegetation is vigorous, diverse in species composition and age class, and reflects the potential natural vegetation or desired plant community for the site" (Upland Soils) b. "Stream bank vegetation is vigorous and diverse, mostly perennial, and holds and protects banks during high stream flow events" (Streams) c. "Riparian vegetation is vigorous and mostly perennial, diverse in species composition, age class and life form sufficient to stabilize stream banks and shorelines." (Riparian and Wetland) d. "Vigor is adequate to maintain desirable levels of plant and animal species to ensure reproduction and recruitment of plants and animals when favorable events occur." (Biodiversity)

5. Plant structure

- a) "Vegetation is vigorous, diverse in species composition and age class, and reflects the potential natural vegetation or desired plant community for the site" (Upland Soils)
- b) Gravel bars and other coarse textured stream deposits are successfully colonized and stabilized by woody riparian species" (Streams)

- c) "Riparian vegetation is vigorous and mostly perennial, diverse in species composition, age class and life form sufficient to stabilize stream banks and shorelines." (Riparian and Wetland)
 - d) "Age class and structure of woody riparian and wetland vegetation are appropriate for the site" (Riparian and Wetland)
 - e) "A variety of age classes are present for most species" (Biodiversity)
 - f) "Wildlife habitats include seral stages, vegetation structure, and patch size to promote diverse and viable wildlife populations" (Biodiversity)
6. Spatial distribution of plants and their habitats
- a) "Distribution of plant species and their habitats allow for reproduction and recovery from localized catastrophic events" (Biodiversity)
 - b) "Wildlife habitats include seral stages, vegetation structure, and patch size to promote diverse and viable wildlife populations" (Biodiversity)
 - c) "Habitat areas are sufficient to support diverse, viable, and desired populations and are connected adequately with other similar habitat areas" (Biodiversity)
 - d) Natural disturbances "Natural disturbances such as fire are evident, but not catastrophic" (Biodiversity)
 - e) Non-native plants and animals, including noxious and invasive species "Non-native plant and animal species are present at acceptable levels" (Biodiversity)
 - f) Special status species
 - g) "Habitat areas are sufficient to support viable populations and are connected adequately with other similar habitat areas" (Biodiversity)
 - h) "Healthy, productive and diverse populations of native plant and animal species, including special status species, are maintained" (Biodiversity)
7. Tree and shrub canopy cover "The stream water surface has a high degree of shading, resulting in cooler water in summer and reduced icing in winter" (Streams)
- a) Woody debris "Riparian vegetation and large woody debris are well anchored and capable of withstanding high stream flow events" (Riparian and Wetland)
8. Streambank stability
- a) "Stream bank vegetation is vigorous and diverse, mostly perennial, and holds and protects banks during high stream flow events" (Streams)
 - b) "Riparian vegetation is vigorous and mostly perennial, diverse in species composition, age class and life form sufficient to stabilize stream banks and shorelines." (Riparian and Wetland)
9. Chemical constituents of water "The following do not exceed the applicable requirements for physical, chemical, and biological constituents including, but not limited to: temperature, nutrients, fecal coliform, turbidity, sediment, dissolved oxygen, aquatic organisms and plants (e.g., macroinvertebrates, fish, algae, and plants)" (Water Quality)
- a) Water temperature
 - b) "The following do not exceed the applicable requirements for physical, chemical, and biological constituents including, but not limited to: temperature, nutrients, fecal coliform, turbidity, sediment, dissolved oxygen, aquatic organisms and plants (e.g., macroinvertebrates, fish, algae, and plants)" (Water Quality)
 - c) "The stream water surface has a high degree of shading, resulting in cooler water in summer and reduced icing in winter" (Streams)

10. Nutrient loading “The following do not exceed the applicable requirements for physical, chemical, and biological constituents including, but not limited to: temperature, nutrients, fecal coliform, turbidity, sediment, dissolved oxygen, aquatic organisms and plants (e.g., macroinvertebrates, fish, algae, and plants)” (Water Quality)
11. Fecal coliform “The following do not exceed the applicable requirements for physical, chemical, and biological constituents including, but not limited to: temperature, nutrients, fecal coliform, turbidity, sediment, dissolved oxygen, aquatic organisms and plants (e.g., macroinvertebrates, fish, algae, and plants)” (Water Quality)
 - a) Turbidity “The following do not exceed the applicable requirements for physical, chemical, and biological constituents including, but not limited to: temperature, nutrients, fecal coliform, turbidity, sediment, dissolved oxygen, aquatic organisms and plants (e.g., macroinvertebrates, fish, algae, and plants)” (Water Quality)
12. Suspended sediment “The following do not exceed the applicable requirements for physical, chemical, and biological constituents including, but not limited to: temperature, nutrients, fecal coliform, turbidity, sediment, dissolved oxygen, aquatic organisms and plants (e.g., macroinvertebrates, fish, algae, and plants)” (Water Quality)
13. Dissolved oxygen “The following do not exceed the applicable requirements for physical, chemical, and biological constituents including, but not limited to: temperature, nutrients, fecal coliform, turbidity, sediment, dissolved oxygen, aquatic organisms and plants (e.g., macroinvertebrates, fish, algae, and plants)” (Water Quality)
14. Aquatic and riparian organisms “The following do not exceed the applicable requirements for physical, chemical, and biological constituents including, but not limited to: temperature, nutrients, fecal coliform, turbidity, sediment, dissolved oxygen, aquatic organisms and plants (e.g., macroinvertebrates, fish, algae, and plants)” (Water Quality)
15. Soil erosion
 - a) “Evidence of wind and water erosion, such as rills and gullies, pedestaling, scour or sheet erosion, deposition of dunes is either absent or if present does not exceed what is natural for the site” (Upland Soils)
 - b) “Negligible accelerated erosion as a result of human activities is present” (Riparian and Wetland)
16. Degree of floodplain flooding “Portions of the primary floodplain are frequently flooded (inundated every 1-5 years)” (Streams)

Monitoring of Vegetation and Physical Attributes

Vegetation monitoring (including soil crusts). Table A.22.2 in the Final EIS lists the trend monitoring methods currently in use or described in the Interagency Technical Reference, Sampling Vegetation Attributes (BLM et al. 1996a) and the plant and vegetation attributes they measure. Of the attributes listed in Table 1 in this appendix, the following can be monitored using a combination of the methods from the technical reference:

- Ground cover
- Litter/residual dry matter
- Plant species diversity
- Plant vigor

- Soil crusts
- Plant structure
- Spatial distribution of plants and their habitats
- Natural disturbances (although not specifically identified by a column heading on Table A.22.2, these can be tracked under the heading “spatial distribution”)
- Non-native plants (these can be monitored by measuring or estimating density, frequency, or cover)
- Special status plants (these can be monitored by measuring or estimating density, frequency, or cover)
- Tree and shrub canopy cover

Note, however, that in some cases these attributes are not measured or estimated as part of the standard procedure. For example, the typical way in which the Daubenmire method (which estimates canopy cover in either 6 or 10 categories in a series of plots) is used yields measurements of the cover of bare ground, vegetation, litter, gravel/rock, as well as frequency and species composition. Other attributes, such as the cover of biological, physical, and chemical crusts, cryptogams, production, and vigor *can* be incorporated into the standard procedure with proper planning.

Monitoring of Guidelines Associated with Utilization, Residue, and Stubble Heights.

For the reasons given in Section 3.2.5 in the Final EIS, it is important to set and monitor guidelines on utilization levels, minimum residues, and minimum stubble heights. Guidelines have been set for the entire EIS area where standards are not being met; site-specific guidelines may be set by Field Offices. Existing monitoring of utilization, residue, and stubble heights will continue, and new studies will be established as needed. On upland perennial rangelands not meeting the standards, utilization will be measured on key species in key areas, with the average (mean) utilization used to assess whether the portion of the allotment or pasture represented by the key area is meeting the utilization guideline (there are indications that the median may be a better statistic to use than the mean; we will calculate both statistics from the same data sets and make this determination after examining the data over a period of a few years). We recognize that residue, in terms of stubble height and litter, is a better measure of utilization in upland perennial grass communities than percent utilization, but we do not have sufficient information at this time to develop guidelines that use these attributes. We intend to investigate this matter further, however, as time and funding permit, and to eventually replace the utilization guidelines on perennial uplands (which specify percent of key species removed) with guidelines specifying minimum amounts of residue to be left. A very preliminary study proposal is given in Table 2.

Table 2. Preliminary Study Proposal: Developing Residue and Stubble Height Guidelines for Major Vegetation Types in the Great Basin

Objective:	Develop upland residue and stubble height guidelines for the major vegetation types in the Great Basin
	Conduct a literature review.
	This review would look at material published in peer-reviewed publications and “gray” literature as well as information collected by field offices. In addition, range scientists at universities and in other agencies (e.g., NRCS, ARS, Forest Service) would be interviewed.

Conduct the following study.

A study would be conducted to fill in the gaps in information that are expected to exist following the literature review. Over a period of several years the residue left following known levels of utilization will be measured at several sites in different vegetation types. This will entail measuring total above ground production in ungrazed areas (using either cages or exclosures), measuring utilization after the grazing season on key species, and measuring the amount of standing and fallen dead plant material (separately) at that level of use. The stubble heights of key species will also be measured both in grazed and ungrazed condition. Photographs will be taken both of the key species and the landscape, both in grazed and ungrazed areas. As much as possible, sites should be selected that are close to existing weather stations (NOAA, RAWS stations, etc.) so the total production can be related to the amount of precipitation received.

The study should be conducted over several years in order to show a range of residue, stubble heights, and utilization levels as related to different amounts of precipitation. This study should enable field personnel to develop either State or regional guidelines on the appropriate residue and stubble height levels that should be left following grazing.

Following is a list of the utilization and residue studies from the Interagency Technical Reference, *Utilization Studies and Residual Measurements* (BLM et al. 1996b) that may be applied to public lands within the EIS area:

Browse Utilization Methods:

- ☐ Twig Length Measurement Method
- ☐ Cole Browse Method
- ☐ Extensive Browse Method

Residue Measuring Methods

- ☐ Stubble Height Method
- ☐ Visual Obstruction Method
- ☐ Comparative Yield Method

Herbaceous Utilization Methods

- ☐ Paired Plot Method
- ☐ Ocular Estimate
- ☐ Key Species Method
- ☐ Height-Weight Method
- ☐ Actual Weight Method
- ☐ Grazed-Class Method
- ☐ Landscape Appearance Method

Exact methods to be used to monitor utilization, residue, and stubble heights will be determined by the Field Offices.

The above utilization and residue monitoring studies are usually applied to key areas (see the glossary in the Final EIS for a definition of key area and the discussion of key areas in Chapter 3, Section 3.2.5 of the Final EIS). Utilization pattern mapping is another important monitoring tool. This method entails canvassing the entire allotment or individual pasture and mapping the area into several classes based on the level of utilization (e.g., no use, light use, moderate use, and heavy use) on key species (see Chapter 3, Section 3.2.5 for more information). These studies will continue where necessary.

Actual use monitoring. Actual use studies (BLM 1984) are another form of traditional range monitoring that will continue. These studies track the actual use made by livestock in pastures and/or allotments based on the numbers of livestock and the length of time livestock are present. These numbers are usually provided by lessees/permittees but are sometimes also estimated from counts by BLM professionals. The actual use made by other herbivores such as wild horses and burros and wildlife is often estimated as well. These data are important in determining what changes should be made when objectives and standards are not being met.

Climate monitoring. It is important to consider climate when interpreting monitoring data. Climate monitoring most often consists of compiling precipitation and temperature information collected by the National Oceanic and Atmospheric Administration at the many weather stations in the EIS area. In some cases, precipitation data are collected through the placement of rain gauges in allotments. Additionally, both temperature and precipitation data are collected from 14 Remote Automated Weather Stations (RAWS) within the EIS area.

Riparian-wetland monitoring. The vegetation attributes of riparian-wetland areas are monitored using one or more of the techniques described in Table A.22.2 in the Final EIS. The Greenline Riparian-Wetland Monitoring Method (BLM 1993a) is also used by some field offices. The following physical attributes are also monitored on some riparian-wetland areas:

- ☐ Bankfull discharge
- ☐ Sinuosity
- ☐ Riparian zone width
- ☐ Floodplain and channel characteristics (i.e., rocks, overflow channels, coarse and/or large woody debris)
- ☐ Width/depth ratio

Use of Qualitative Assessments to Determine if Standards are Being Met

As noted above, traditional range monitoring studies can help assess whether standards are being met. The standards, however, call for the assessment of indicators that are not addressed by these traditional monitoring studies. Where the status of these indicators cannot be inferred from existing monitoring information, other monitoring or assessment methods must be employed. The following qualitative assessment procedures were developed to rapidly assess all the physical and biological components of rangeland health.

Qualitative Upland Assessment. For uplands, the qualitative assessment method will be used. Although a technical reference has not yet been finalized on the method, a draft has been prepared and field tested. The details were given in Appendix 25 in the Final EIS. Field Offices may adapt this method as necessary to meet local needs.

The results of the qualitative assessment will be used in conjunction with all other available information to determine if an allotment is meeting the standards. If it is not, and does not appear to be making significant progress toward meeting the standards, and grazing has been determined to be a significant factor, changes will be made to the management of livestock grazing. To assess whether these management changes are effective in moving toward meeting the standards, monitoring will be initiated (or, if already being conducted, will be continued) that is directed toward those indicators that caused the allotment to not meet the standards. For example, if the qualitative assessment indicates that insufficient litter is present, subsequent monitoring will focus on measuring the amount of litter (either the cover of litter or the amount in weight of litter).

Qualitative Riparian/Wetland Assessment. A qualitative procedure, called proper function condition (PFC) assessment (see Appendix 23 of the Final EIS), is already in place to help assess whether riparian and wetland areas are meeting the standards (BLM 1993b and 1994). This PFC assessment has already been applied to many riparian/wetland areas within the EIS area. Its use will be continued. Just as with the upland qualitative assessment procedure, when the PFC results in one or more indicators being responsible for an allotment not meeting the standards, subsequent monitoring will focus on those indicators. For example, if the width/depth ratio is the main reason a stream is determined to be not meeting the standard of proper functioning condition, subsequent monitoring would focus on the width/depth ratio of the stream.

Wildlife Monitoring for Rangeland Health

The standards for rangeland health include a "biodiversity" standard. They also include several indicators of animal habitats and populations that are attributes of a healthy rangeland ecosystem. These indicators can be divided into those related to habitat and those related to animal populations. The habitat indicators include habitat seral stages, vegetation structure and patch size, spatial distribution of habitats, habitat size, how habitats are connected, and the habitat's ability to support viable populations. The animal population indicators include the spatial distribution of animals, special status species numbers, stable to increasing populations, viable populations, and levels of non-native animals.

The BLM recognizes that determining the biodiversity health for each allotment is an impossible task involving the gathering of species-specific data at many locations and scales. However, a more achievable option is to design monitoring programs that evaluate ecosystem components, structures and processes as indicators of a habitat's *capability* to support healthy animal communities. We would then rely on focused studies to more directly monitor species of management concern.

There are different scales of monitoring and management to evaluate the relationships between habitat management from livestock grazing and animal populations. It is critical to evaluate the assumptions that habitat management at the allotment (or pasture) level will actually affect animal presence and abundance at the monitoring site(s). It is necessary to determine the appropriate scale of monitoring: coarse scale regional monitoring of several allotments for some animal community indicators; fine scale monitoring at the allotment level for some special status, game animals, and keystone species; and site-specific scale for some special status species and ecosystem health indicators that are restricted to very small habitat areas. Monitoring plans should consider these issues of scale when designing allotment monitoring programs.

Habitat mapping and vegetation monitoring would usually suffice to evaluate whether the allotments are providing *adequate opportunities* for wildlife communities in meeting the standards. Spot checking for selected species at the appropriate habitats over several allotments would evaluate rangeland health for many species. At a finer scale of analysis, population censuses at the allotment scale may be needed to determine if the standards are being met.

This finer scale monitoring would be directed at special status animals or at species with a very restricted habitat requirement as a rangeland health indicator.

Most allotment monitoring will evaluate the habitat capability for species of management concern. Vegetation characteristics of habitat structure (for example, ground cover, vertical layering, form of trees and shrubs), plant composition, age structure of plants (young, reproducing, old, or decadent trees or shrubs), plant vigor, and the distribution of plant communities across the landscape will be the focus of BLM's monitoring.

Field assessments should emphasize the use of habitat quality checklists to identify significant problems at the appropriate scale (allotment or landscape levels). These checklists can be designed to evaluate habitat quality for a particular species, group of species, or general animal community composition. The elements of such a checklist are given in Table 3. More focused studies or monitoring protocols may be developed where habitat monitoring indicates standards are not being met and where management priority is high.

The BLM will consider existing information on soils, habitats, scientific literature, historic records, fire history, and disturbance regimes to assess habitat capability. When more detailed information regarding a particular species is required, wildlife information systems and species records may be used to conduct assessments of habitat quality for animals of management concern. The California Wildlife Habitat Relationships System (CWHR) and Habitat Evaluation Procedures (HEP) models may be used for these assessments. These models are based on the assumptions that through habitat assessments, habitat capability (quality) for a particular species or group of species can be determined. The California Natural Diversity Data Base will be used to help assess the significance of BLM actions on special status animal species and rare plant communities.

The rangeland health indicators for animal (wildlife) populations cannot be assessed separately for each species. Evaluating animal numbers and distributions for each species would require an extensive amount of monitoring of hundreds of animal species, a task far beyond the capability of the BLM and our State and private management partners. Instead, monitoring must be focused on a subset of animal "indicator" species that represent wildlife communities and populations in general as indicators of ecosystem health. While this method of monitoring has been criticized as flawed since each species has its own niche in the ecosystem that cannot be represented by another species, this approach gives the BLM the opportunity to focus wildlife monitoring within our capability. The indicator species may be threatened or endangered, game animals, species of regional or special concern, keystone species, abundant, or rare. The selection of the indicator species will depend on the allotment management objectives, land use plan objectives, and/or BLM commitments to regional plans. The monitoring of the indicator species may include general distribution or abundance surveys or more focused research to better evaluate the relationships between the animals and their habitats and grazing effects. In many cases, data collection may not be required within each allotment, but across the landscape in habitats with similar characteristics.

Table 3. Elements of a Biodiversity and Species Checklist for Wildlife.

Habitats

CWHR Habitats and seral stage (es) present:

Habitat composition and seral stages related to management objectives:

- Seral stages meet management objectives
- Plant community composition indicates good rangeland health
- Native species present at acceptable levels
- Non-native species at acceptable levels
- Invasive weeds at acceptable levels

Habitat structure related to management objectives:

- Plant cover is adequate, within natural range
- Plant height adequate: herbaceous shrub trees
- Plant density is adequate
- Plants distributed normally

Ground cover is within normal range
 Age-class indicates community maintenance
 Form-class indicates normal growth characteristics

Distribution of Habitats across landscape:

Patch size is adequate
 Fragmentation is not excessive
 Habitats are connected within site capability

Species

Management indicators selected:

Habitats meet requirements of indicator species:

Elements are considered acceptable:
 Elements lacking:

Key management areas present:

Listed species habitats
 Riparian
 Wetlands
 Seasonal ranges (winter, migratory, calving/fawning, etc)
 Breeding/nesting sites

Focused Studies

Focused studies in progress:

Focused studies needed:

Evaluation:

Habitats are meeting management objectives Habitats promote diverse and viable wildlife populations Seral stages present Composition

Structure Distribution Habitats can withstand catastrophic events (flood/fire/windstorm) Species present indicate healthy ecosystem function Habitats meeting species/diversity standards Habitats not meeting species/diversity standards Livestock grazing/management is (is not) significant factor Management changes needed to meet standards

Water Quality Assessment and Monitoring

Most often, when riparian areas and wetlands are healthy, the quality of water for most beneficial uses meets standards. Many of the attributes assessed and monitored for riparian and wetland areas also affect the quality of the water, at least indirectly. There are exceptions, however, where this may not always be true, particularly with regard to the chemistry and physical properties of the water. Biological assessments and monitoring of aquatic organisms in water bodies serve to identify important attributes reflecting the quality of water for many beneficial uses and will be used when it is determined that the quality of the water may be in question.

In most situations BLM will depend upon the State and Regional water quality agencies to either identify, or assist BLM in identifying, where water quality is impaired or has a high probability of being impaired.

For those areas where livestock grazing activities on public land are known to cause or are suspected of causing water quality impairment, BLM will closely coordinate with these agencies in obtaining any needed water quality monitoring and assessment information. Where sufficient information is not available, BLM will also closely coordinate with these agencies in the selection and design of the attributes to be assessed and monitored by BLM. Since the states have primary responsibility and primacy regarding the Clean Water Act and the Safe Drinking Water Act, it is important that any water quality assessment or monitoring information obtained by BLM meet the acceptance of those state agencies responsible for identifying the specific requirements of those Acts.

Effectiveness Monitoring of Guidelines

Effectiveness monitoring is used to evaluate whether a particular activity, when carried out as planned, results in the desired effect (MacDonald et al. 1991). In the context of rangeland standards and guidelines, effectiveness monitoring will be used to evaluate whether guidelines, if followed, result in either meeting or making progress toward meeting the standards. This type of monitoring will be employed when the other types of monitoring and assessment discussed in this appendix determine that progress is not being made toward meeting standards despite compliance with guidelines. For example, a grazing system is implemented in order to move an allotment toward meeting standards, but after five years of monitoring no progress is detected. The management system will then be evaluated to determine why it is not producing the desired effects and changed accordingly. Utilization and stubble height guidelines provide another example. If, after several years of compliance with these guidelines, allotments are not moving toward meeting standards, these guidelines will be evaluated and supplanted by new ones as appropriate.

Application of New Technology to Monitor and Assess Rangeland Health

Traditional transect-based techniques for measuring vegetation and other indicators of rangeland health provide detailed information at a plot level. Care must be used when using plot-based measurements to characterize large areas because of problems in extrapolating information from small samples to large areas. Methods for assessing rangeland health at multiple scales are currently in their infancy. The use of remotely-sensed data, primarily satellite imagery, will hopefully become a rapid and inexpensive method for measuring rangeland health on larger areas.

One pilot effort recently initiated in the northeastern portion of the EIS area is a cooperative project between BLM, the National Resource Conservation Service, and the Forest Service's Pacific Northwest Experiment Station. It involves the transitioning from traditional Soil Surveys to Resource Surveys, which are multi-resource, map-based surveys of soil, vegetation, water, and wildlife characteristics. Part of the project will include development of a set of tools that will be designed to assess rangeland health at multiple scales and areal extent.

As new methodologies such as this one are developed, they will be applied to monitoring and assessing rangeland health standards within the EIS area.

Monitoring and Assessment Plans

Each Field Office will develop a plan that will direct its monitoring and assessment activities relative to making determinations on whether standards are being met, whether progress is being made toward meeting the standards if they are not currently being met, and whether livestock grazing is the reason for standards not being met. These plans need not be elaborate, but at a minimum they will include a list of the attributes that will be monitored, the monitoring methods that will be used (with reference to a complete description of the method), the allotments that will be monitored using these methods, the frequency at which the allotments will be monitored, and how often interdisciplinary assessments will be

made of all the information collected (including monitoring data, qualitative assessment information, inventory data, etc.). A monitoring and assessment schedule will also be included. These monitoring and assessment plans will be made available to all interested parties.

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Appendix C

Northeast California Resource Advisory Council Recommended Off-Highway Vehicle Management Guidelines

Bureau of Land Management

Northeast California Resource Advisory Council

Recommended Off-Highway-Vehicle Management Guidelines

Adopted and Forwarded to the Bureau of Land Management
at a Regularly Scheduled Business Meeting
August 29, 2000
Susanville, California

The guidelines for Off-Highway-Vehicle management are the methods and practices determined to be appropriate to ensure that BLM Land Health Standards can be met, or that significant progress can be made toward meeting the standards. The guidelines were designated to provide direction, yet offer flexibility, for implementation through OHV designations, activity plans and permit terms and conditions.

Guideline 1: OHV use will not be allowed on streams, riparian/wetland areas. Where needed, crossings will be bridged or hardened.

Guideline 2: OHV use will not degrade ecological status.

Guideline 3: OHV use requires review/action during/after periods of high use and or stress (fire, flood, and drought). OHV closure may be appropriate in response to factors such as accelerated erosion or loss of natural barriers to off-road use.

Guideline 4: Plans for OHV use must consider other resources and uses (livestock grazing, recreation, archaeological sites, wildlife, horses and burros, mineral resources extraction, etc.) and be coordinated with other users of public lands. Management of OHV Use should be sensitive to the creation and management of areas for quiet activities.

Guideline 5: OHV use will be managed to provide for the maintenance and reproduction of desired plant species and the achievement of the potential natural vegetation or desired plant communities.

Guideline 6: OHV special events will require permits that will include site specific, measurable terms and conditions.

Guideline 7: OHV projects that are subject to California OHV grant funding shall comply with that program's requirements as well as Land Health Standards. Tread Lightly concepts and non-proliferation principles will be included in permits.

Guideline 8: OHV use must consider habitat requirements for fish and wildlife

Guideline 9: OHV management practices must consider soil erodibility. Route designation and OHV management will be based on erosion hazard ratings.

Guideline 10: The spread of noxious weeds by OHV use will be combated through public education efforts, and vehicle cleaning requirements, or other measures, where appropriate.

Guideline 11: Locate routes, trails and developments away from sensitive areas.

Guideline 12: OHV related activities will be managed to protect and maintain watershed and water quality.

Guideline 13: Use various communication and interpretive measures and user groups to inform public land visitors about an ethic of public land use.

Guideline 14: OHV utilization and impacts will be monitored using currently accepted practices and techniques.

Guideline 15: “Open” OHV use areas must be specifically designated.

Appendix D

Energy and Minerals

Reasonably Foreseeable Development in the Alturas Field Office

Appendix D

Energy and Minerals Reasonably Foreseeable Development in the Alturas Field Office

Introduction

This appendix describes scenarios for the reasonably foreseeable development of leasable, locatable, and saleable mineral commodities. The scenario for reasonably foreseeable development estimates the level and type of future mineral activity in the planning area and provides a basis for the analysis of cumulative effects. The scenario first describes the steps in developing a mineral deposit, with presentation of hypothetical exploration and mining operations. Current levels of activity are discussed in Chapter 3. Trends and assumptions affecting mineral activity are discussed in this appendix, followed by estimates for future mineral exploration and development.

Scope

The scenario for reasonably foreseeable development is based on known or inferred mineral resource capabilities and applies the conditions and assumptions discussed below. Changes in available geologic data or economic conditions would alter reasonably foreseeable development, and some deviation should be expected over time. The development scenario is limited to BLM-administered land.

Leasable Mineral Resources

Reasonably Foreseeable Development of Oil and Gas

Future trends and assumptions: Based on the history of minimal interest for oil and gas exploration and the limited development potential of the planning area, activity over the next 15 to 20 years is likely to be sporadic. Oil and gas activity will probably consist of the issuance of some competitive and over-the-counter leases, a few geophysical surveys, and perhaps the drilling of two or three exploratory wells.

Geophysical exploration: Geophysical exploration is conducted to determine the subsurface structure of an area and the potential for mineral resources. Three geophysical survey techniques are generally used to define subsurface characteristics through measurements of the gravitational field, magnetic field, and seismic reflections.

Gravity and magnetic field surveys—involve small, portable measuring units that are easily transported by light off-highway vehicles, such as 4-wheel drive pickup trucks and jeeps, or aircraft. Both off and on-highway travel may be necessary. Although these two survey methods can take measurements along defined lines, it is more common to have a grid of distinct measurement stations. Surface disturbance resulting from these surveys is negligible, consisting almost exclusively of soil or vegetation compaction that persists no more than a few months.

Seismic reflection surveys—are the most common of the geophysical methods, and they produce the most detailed subsurface information. Seismic surveys are conducted by sending shock waves, generated by a small explosion or by mechanically beating the ground with a thumping or vibrating platform. In the mechanical technique, four large trucks are usually used, each equipped with pads about 4-feet square. The pads are lowered to the ground, and the vibrations are electronically triggered from the recording truck. Once information is recorded, the trucks move forward a short distance and the process is repeated. Surface disturbance includes flattening of vegetation and compaction of soils.

The explosive method—requires that small charges be detonated on the surface or in a shallow drill hole. Holes for the charges are drilled using truck-mounted or portable air drills. In general, this method uses 4 to 12 holes per mile of line, and a 5 to 50-pound explosive charge is placed in each hole, covered, and detonated. The shock wave created is recorded by geophones placed in a line on the surface. In rugged terrain, a portable drill carried by helicopter can sometimes be used. The vehicles used for a drilling program may include heavy truck-mounted drill rigs, track-mounted drill rigs, water trucks, a computer recording truck, and a light pickup.

Existing roads and trails are used where possible, but off-road travel is necessary in some cases. Several trips per day are made along a seismograph line, usually resulting in a well defined two-track trail. The surface charge method uses 1 to 5-pound charges attached to wooden laths 3 to 8 feet above the ground. Placing charges lower than 6 feet usually results in destruction of vegetation, whereas placing the charges higher, or on the surface of deep snow, results in little visible surface disturbance.

It is expected that three to five notices of intent, involving seismic reflection and gravity/magnetic field surveys, would be filed under all Alternatives and the Proposed RMP during the life of this plan. The total expected surface disturbance would be approximately 1 acre.

Drilling phase: After an application to drill is approved, the operator may begin construction in accordance with lease stipulations and conditions of approval of the drilling permit. When a site requires construction of an access road, the shortest feasible route is usually selected to reduce the haul distance and construction costs. Environmental factors or a landowner's wishes may dictate a longer route in some cases. Drilling in the planning area is expected to be done using existing roads and construction of only short (approximately 0.5 mile) roads to access drill site locations.

Based on the history of oil and gas exploration in the planning area, it is projected that two or three exploratory wildcat wells would be drilled on BLM-administered land in the planning area during the life of this plan. The estimated success rate would be no greater than 10 percent, based on the average wildcat success rate. Drilling is expected to occur in areas of low oil and gas potential, the highest level of potential in the planning area. There is a low probability that a field will be discovered during the life of this plan, with a strong likelihood that the discovery would be natural gas because most of the occurrences, in surrounding areas, are gas. There are no known occurrences in the actual planning area.

During the first phase of drilling, the operator would move construction equipment over existing maintained roads to the point where the access road begins. Less than 0.5 mile of moderate duty access road with a gravel surface 18 or 20 feet wide is expected for construction. With ditches, cuts, and fill, the total width of surface disturbance would average 40 feet. The second part of the drilling phase is the construction of the drill pad (platform). The likely duration of well development, testing, and abandonment is 3 or 4 months per site. The total disturbance for each exploratory well and any new road is estimated to be less than 5 acres. The total surface disturbance caused by exploratory drilling over the life of this plan is expected to be about 13 acres.

Field development and production: Exploratory drilling is not expected to lead to the development of a producing field in the planning area. Nonetheless, the following scenario describes the operations and effects associated with field development. Any oil and gas deposits found in the planning area will probably be too small to be economically developed.

The minimum size considered economically feasible would be a field containing reserves of 50–60 billion cubic feet of gas with a productive life of 10 years. The total area of the field would be 800 acres, with a likely well spacing of 160 acres. The field would require four development wells in addition to the discovery well. Each development well would require 0.25 mile of road. Development well access roads

would have a surface of crushed aggregate or gravel and would be approximately 20 feet wide (total disturbed width of 40 feet). Gas produced would be carried by pipelines that could be linked to existing and proposed gas transmission lines in the planning area. Average pipeline length is estimated to be 40–50 miles. The width of the surface disturbance for pipelines would average 30 feet. Any oil produced would be trucked to refineries outside of the local area. Established companies would service the wells.

The total surface disturbance would be 8 acres for well pads, 5 acres for roads, 13 acres for field development; and 725 acres for pipelines (145 acres/well site). The total surface disturbance caused by exploration and development would be 761 acres.

Plugging and abandonment: Wells that are completed as dry holes are plugged according to a plan designed for the condition of each well. Plugging involves placing cement plugs at strategic locations in the hole. Drilling mud is used as a spacer between the plugs to prevent communication between fluid-bearing zones. The drill casing is cut off at least 3 feet below ground level and capped by welding a steel plate on the casing stub. After plugging, all equipment and debris would be removed and the site restored as near as reasonably possible to its original condition. It is projected that one exploratory well that may be drilled would be plugged and abandoned.

Reasonably Foreseeable Development of Geothermal Resources Future trends and assumptions

Because environmental protection and enhancement are major concerns for the BLM, sources of energy with a small environmental impact are becoming increasingly important. The geothermal energy resources known to exist in the region are essentially undeveloped, especially in the planning area. With recent interest in geothermal resources expressed by some governmental and private entities, geothermal exploration may be initiated in the planning area which could possibly lead to development of the resource.

Geophysical/geochemical exploration: As with oil and gas, geophysical/geochemical activities can take place on leased or unleased public land. The operator must comply with all terms and conditions of permits, NEPA, regulations, and other requirements, including reclamation, prescribed by the authorized officer. Monitoring for compliance with these requirements would be done during operations and upon their completion. In addition to geophysical methods discussed in the previous section on oil and gas, the following exploration techniques are often employed in geothermal prospecting:

Microseismic: Small seismometers buried at a shallow depth (hand-dug holes) transmit signals from naturally occurring, extremely minor seismic activity (microearthquakes) to an amplifier on the surface. Stations are located away from roads to avoid the effects of traffic. These units are often backpacked into areas inaccessible to vehicles.

Resistivity: Induced polarization techniques are used to measure the resistance of subsurface rocks to the passage of an electric current. A vehicle-mounted transmitter sends pulses of electric current into the ground through two widely spaced electrodes (usually about 2 miles apart). The behavior of these electrical pulses as they travel through underlying rocks is recorded by small devices that receive the current at different locations. The electrodes are either short rods (2–3 feet long) driven into the ground or aluminum foil shallowly buried over an area of several square feet. Two or three small trucks transport a crew of three to five people to transmitting and receiving sites.

Telluric: A string of receivers record the variations in the natural electric currents in the earth. No transmitter is required. Small trucks are used to transport the crew and equipment.

Radiometric: Radioactive emissions (generally radon gas) associated with geothermal resources are measured using a hand-held scintillometer, often at hot spring locations. Another method involves placing plastic cups containing small detector strips sensitive to alpha radiation either on the surface or in shallow hand-dug holes. If holes are dug, they are covered, and the cups are left in place for 3 to 4 weeks. At the end of the sampling period, the cups are retrieved and all holes are backfilled. These surveys can be conducted by walking to the sites or with the aid of light vehicles.

Geochemical surveys: Geochemical surveys are usually conducted at hot springs by taking water samples directly from the spring. Mercury associated with geothermal resources is often sampled using hand tools. These surveys can be conducted by walking to the sites or with the aid of light vehicles.

Temperature gradient drill hole surveys: Temperature gradient holes are used to determine the rate of change of temperature with respect to depth. Temperature gradient holes usually vary in diameter from about 3.5 to 4.5 inches, and from a few hundred feet to 5,000 feet in depth. They are drilled using rotary or coring methods. Approximately 0.1 to 0.25 acre/drill hole would be disturbed. A typical drill site could contain a drill rig (most likely truck-mounted), water tank(s), fuel tank, supply trailer, and a small trailer for the workers. Drilling mud and fluids would be contained in earthen pits or steel tanks. Water for drilling would be hauled in water trucks, or if suitable water sources are close, could be piped directly to the site. Water consumption could range from about 2,000 to 6,000 gallons/day, with as much as 20,000 gallons/day under extreme lost circulation conditions.

Other equipment that could be used includes large flatbed trucks to haul drill rod, casing, and other drilling supplies; in some cases special cementing and bulk cement trucks; and two small vehicles for transporting workers. In most cases, existing roads would be used. It is likely that short spur trails (usually less than 500 yards) would be bladed for less than 10 percent of these holes. All holes would be plugged and abandoned to protect both surface and subsurface resources, including aquifers, and reclamation of disturbed areas would be required, unless some benefit to the public could be gained (for example, a water well or camping area). Depending upon the location and proposed depth of the drill hole, detailed plans of operation that cover drilling methods, casing and cementing programs, well control, and plugging and abandonment could be required. Based upon past geothermal exploration in California and a projected increase in power demand, it is expected that 6 notices of intent for surface geophysical surveys and 5 notices of intent to drill 30 temperature gradient holes would be filed under all Alternatives during the life of this plan. Total surface disturbance resulting from geophysical surveys over the life of the plan is expected to be about 0.5 acre, and disturbance resulting from temperature gradient holes is expected to be about 5.5 acres.

Drilling and testing: Drilling to detect, test, develop, produce, or inject geothermal resources can be done only on land covered by a geothermal lease.

A typical geothermal well drilling operation would require 2–4 acres for a well pad, including reserve pit, and 0.5 mile of moderate duty access road with a surface 18 to 20 feet wide (total disturbed width, with ditches, cuts, and fills, of 40 feet). Existing roads would be used whenever possible. Total surface disturbance for each well and any new road is expected to be less than 6 acres. In some cases, more than one production well could be drilled from one pad. Well spacing would be determined by the authorized officer after considering topography, reservoir characteristics, the optimum number of wells for proposed use, protection of correlative rights, potential for well interference, interference with the multiple uses of the land, and protection of the surface and subsurface environment. There would be close coordination with the State of California. The expected duration of well development, testing, and abandonment (if dry) would be 6 months. It is estimated that eight exploratory wells would be drilled under all alternatives and the Proposed RMP during the life of the plan, resulting in a total surface disturbance of 34 acres.

Plugging and abandonment: Before abandonment, the operator would be required to plug the hole to prevent contamination of aquifers and any effects to subsurface and surface resources. Cement plugs would be placed at strategic locations in the hole using the same techniques as for exploratory oil and gas wells. Any new roads not needed for other purposes would be reclaimed.

Geothermal power plant development: It is projected that one power plant generating 25 megawatts of electricity (gross) may be constructed under all alternatives during the life of the plan and employing an estimated 30 people. It is expected that the developed geothermal power plant would be water-dominated and that the geothermal power conversion system would either be single or double flash, or binary cycle. Before geothermal development could occur, site specific baseline studies and environmental analyses, with public involvement, would be done. The scenario below describes the level of disturbance that would most likely occur from the development of a 25-megawatt power plant.

Five to seven production wells and one or two injection wells would be drilled. Access would be provided by existing roads and new, short roads (0.5–1 mile) 18 to 20 feet wide (up to 40 feet total disturbed width). Surface disturbance from well pad and road construction would probably range from 2 to 6 acres per well. The power plant, including separators, energy converters, turbines, generators, condensers, cooling towers, and switchyard, would cover an estimated 10 to 15 acres. Pipelines and power lines would disturb an additional 3 to 6 acres. If a water cooling system is employed, one to three water wells, requiring approximately 0.25 acre per well, would be drilled, unless the cooling water was obtained from the geothermal steam condensate. Depending upon the location, terrain, geothermal reservoir characteristics, and type of generating facility, the total surface disturbance would probably range from 25 to 75 acres, most likely about 50 acres. After construction, approximately one-third to one-half of the disturbed area would be revegetated. The remaining disturbed area would be reclaimed before abandonment.

Direct use of geothermal energy: Low and moderate-temperature (300 to 500 °F) geothermal resources may have direct applications, including space heating and cooling of residences and businesses; applications in agriculture and industry; and recreational and therapeutic bathing. Depending on the type of use and magnitude of operation, surface disturbance could range from a few acres for a well and greenhouse or food processing facility, to tens of acres for larger agricultural or aquacultural developments. Although geothermal resources are found throughout the planning area, the small, somewhat isolated population makes any direct use of geothermal energy on public land unlikely.

Locatable Mineral Resources

Reasonably Foreseeable Development Scenarios

The major commodities of interest over the next 15 to 20 years will probably be gold/silver and zeolites. Other commodities that may be present in the field area are diatomite, bentonite and perlite. This assessment is based on market conditions (especially for precious metals) and the favorable geologic environment for mineral occurrences. Reclamation science will continue to advance due to experience and research. More detailed design will be required for the reclamation of mined land in the future. This will likely increase reclamation costs but should also increase long-term reclamation success. The economics of mining in the planning area will be driven by the relationship between production costs and the market price of the commodity. Whereas production costs can be controlled, or anticipated through management and technology, the price of a commodity is difficult to predict over time. The overall profitability of an operation—and hence the level of activity at the prospecting, exploration, and mining stages—for development of ore bodies is closely related to the price of the mineral commodity.

Over the next 15 to 20 years, it is expected that two mines may be developed in the planning area: one open-pit gold mine using chemical heap leaching, at least in part; and one mine of zeolites.

Background on the Development of a Locatable Minerals Mine

Typically, the development of a mine goes through five stages, with each stage using progressively more sophisticated (and more expensive) techniques over a successively smaller area to identify, develop, and produce an economic mineral deposit. The full sequence of developing a mineral project involves reconnaissance, prospecting, exploration, economic evaluation, and development.

Reconnaissance: Reconnaissance is the first stage in exploring for a mineral deposit. This involves an initial literature search for the area of interest using available references, such as publications, reports, maps, and aerial photographs. Because the study area is usually large, varying from hundreds to thousands of square miles, this stage normally involves large-scale mapping, regional geochemical and/or geophysical studies, and remote sensing with aerial or satellite imagery. These studies are generally undertaken with minimal surface disturbance, which usually consists of stream sediment, soil, or rock sampling. Minor off-highway vehicle use may be required.

Prospecting: If reconnaissance identifies anomalous geochemical or geophysical readings, rare or unusual geological features, evidence of mineralization, or a historical reference to mineral occurrence, a prospecting area of interest is identified. This area could range from a single square mile to an entire mountain range of several hundred square miles.

Activity to locate a mineral prospect includes more detailed mapping, sampling, and geochemical and geophysical study programs. This is the time when property acquisition efforts usually begin and most mining claims are located to secure ground while trying to make a mineral discovery. Surface-disturbing activities associated with prospecting include more intense soil and rock chip sampling, using mostly hand tools; frequent off-highway vehicle use; and placement and maintenance of mining claim monuments. This activity is usually considered casual use (43 CFR 3809.1-2) and does not require BLM notification or approval.

Exploration: Upon location of a sufficiently anomalous mineral occurrence or favorable occurrence indicator, a mineral prospect is established and subjected to more intense evaluation through exploration techniques. Activities during exploration include those used during prospecting, but at a more intense level and in a small area. In addition, road construction, trenching, and drilling take place. In the later stages of exploration, an exploratory adit or shaft may be driven. If the prospect already has underground workings, these may be sampled, drilled, or extended. Exploration activities use mechanized earth-moving equipment; drill rigs, etc., and may involve the use of explosives.

Typical exploration projects in the planning area could include in-stream dredging with portable suction dredges; exploratory drilling, which could include construction of new roads; use of explosives to sample rock outcroppings; and excavation of test pits. If the exploration project disturbs 5 acres or less, it is conducted under a notice (43 CFR 3809.1-3) which requires the operator to notify the BLM at least 15 days prior to beginning the activity. If a project disturbs more than 5 acres, it is conducted under a plan of operations (43 CFR 3809.1-4) and requires NEPA compliance prior to approval.

Economic evaluation: If an exploration project discovers a potentially economic deposit, activity would intensify to obtain detailed knowledge of the deposit (such as ore grade and deposit size), possible mining methods, and mineral processing requirements. This would involve applying all the previously used exploration tools in a more intense effort. Once enough information is obtained, a feasibility study would be made to decide whether to proceed with mine development and what mining and ore processing methods would be used.

Mine development: Once the decision to develop a property has been made, the mine permitting process begins. Upon approval, work begins on development of the mine infrastructure. This includes constructing the mill, offices, and laboratory; driving development workings if the property is to be an underground mine, or prestripping if it is to be an open-pit mine; building access or haul roads; and placing utility services. Evaluations of ore reserves may be refined at this time.

Once enough facilities are in place, production begins. Satellite exploration efforts may be conducted simultaneously to expand the mine's reserve base and extend the project life. The property is reclaimed concurrently with the mining operation or upon its completion. Often uneconomic resources remain unmined and the property dormant until changes in commodity prices or production technology makes these resources economically feasible to mine.

Activities on these lands include actual mining, ore processing, tailings disposal, waste rock placement, solution processing, metal refining, and placement of support facilities, such as repair shops, laboratories, and offices. Such activities require the use of heavy earth-moving equipment and explosives for mining and materials handling, exploration equipment for refining the ore reserve base, hazardous or dangerous reagents for processing requirements, and other equipment for general construction.

The size of mines varies greatly, and not all mines require all of the previously mentioned facilities and equipment. The amount of land involved can range from only a few acres to several hundred, with most projects disturbing 5 acres or less and requiring a notice pursuant to 43 CFR 3809.1-3. Projects disturbing more than 5 acres require an approved plan of operations pursuant to 43 CFR 3809.1-4.

Reasonably Foreseeable Development

Gold/Silver

Exploration: Based on mineral exploration activity over the past 10 years and known occurrences in the planning area of hot springs type gold deposits, exploration for gold is expected to take place during the life of this plan.

Depending on the market for gold, up to 25 exploration projects for hot springs gold deposits are expected over the next 15 to 20 years. A typical hot springs exploration project would involve six drill holes and approximately 0.5 mile of new road 12 feet wide (total disturbed width of 20 feet) for each drill hole, resulting in 4.2 acres of disturbance/project, or 105 acres of total disturbance.

Economic evaluation/mine development:

Exploration activity may result in the discovery 1 open-pit deposit, employing about 170 people. The possible deposit would be located in or adjacent to areas of known potential for gold/silver.

The open-pit mine is expected to contain between 10 and 90 million tons of ore, with a probable size of 15 million tons, averaging 0.06 troy ounces of gold per ton. Detailed exploration and feasibility studies would involve the construction of about 30 miles of road 12 feet wide (total disturbed width of 20 feet with ditches, cuts, and fills), and 300 drill sites, for a total disturbance of 75 acres. Development of the deposit would involve creation of an open pit, 2,100 feet in diameter and 800 feet deep; a mill complex; a cyanide heap leach pad; a tailings disposal facility; a waste disposal facility; approximately 5 miles of internal graveled haul road 90 feet wide with a total disturbance of 100 feet; and 15 miles of all-weather access road 20 feet wide (total disturbed width of 36 feet). Surface disturbance would cover 85 acres for the pit, 40 acres for the mill complex, 65 acres for the heap leach pad, 140 acres for the tailings disposal

facilities, 260 acres for the waste disposal facilities, 60 acres for internal haul roads, and 65 acres for access roads. Total surface disturbance caused by this project would be 715 acres.

Industrial Minerals

Exploration: Based on mineral exploration activity over the past 10 years and known occurrences in the planning area, a moderate amount of exploration for industrial minerals—mainly zeolite—is expected during the life of this plan. Depending on market conditions, up to three projects are expected for zeolite. Exploration for this commodity consists of auger holes or trenching and road construction. An average project would involve up to 10 auger holes; 5 trenches 20–25 feet wide, 60–125 feet long, and 15–25 feet deep; and 1,000 feet of road 12 feet wide (total disturbed width of 20 feet), for a disturbance of 0.8 to 1 acre/project.

Economic evaluation/mine development: Exploration activity is not expected to result in the discovery of an economically mineable deposit. In spite of the low probability of discovery the following scenario would be appropriate based on mine models developed by the U.S. Bureau of Mines. The zeolite deposit would be expected to contain between 50,000 and 120,000 tons of ore, most probably about 85,000 tons, with an assumed moisture content of 25 percent. Development of the deposit would involve an open pit approximately 1,000 feet long by 130 feet wide by 30 feet deep, with a zeolite bed 20 feet thick; a mill complex, assumed to be on public land 15 miles off-site and adjacent to a paved road; a stockpile near the pit; 100 feet of haul road 20 feet wide (total disturbed width of 36 feet); and 10 miles of access road 20 feet wide (total disturbed width of 36 feet). Surface disturbance resulting from this mine would be 3 acres for the pit, 1 acre for the stockpile, 0.1 acre for the haul road, 44 acres for the access road, and 5 acres for the mill.

Saleable Mineral Resources

Reasonably Foreseeable Development Scenarios

The major use of saleable minerals (primarily cinders and sand) would continue to be for road construction and maintenance by the State of California, Lassen, Modoc and Shasta County Road Departments. Most of this activity would be routine seasonal maintenance on county roads which would result in a moderate increase in demand for the materials. Because the population of the area is expected to increase over the life of this plan, it is likely that public demand for saleable minerals will increase slightly over current levels, with the highest demand for decorative stone.

Existing sources of material would handle some of the increased demand. Many of the sites, however, have a small reserve base and could be depleted in a few years. Consequently, up to 20 new sources of material—10 sand and cinder pits, 5 rock quarries and 5 collecting areas for decorative stone—may need to be developed during the next 15 to 20 years:

Background on the Development of Saleable Mineral Deposits

Development of a saleable mineral deposit goes through a sequence similar to that for locatable minerals and includes reconnaissance, prospecting, exploration (sampling and testing), and development. Unlike the process for locatable minerals, however, written approval (such as a permit) must be obtained from the BLM and the material must be purchased by the operator (in the case of a private citizen or commercial operator) before the deposit can be developed, as required by the 1947 “Materials Act” as amended (30 U.S.C. 601 et seq.). The act also grants the Federal government discretionary authority to deny permission to develop a deposit if the damage to public land or resources would outweigh the economic benefits of development.

Reconnaissance and prospecting for saleable minerals involves a literature search, field examination, geologic mapping (if necessary), and surface sampling. Surface disturbance is usually negligible. Exploration is usually confined to a small area and generally involves drilling or core drilling to determine whether the material meets construction standards. Because exploration is normally limited to areas with good access to major roads, little or no road construction is involved. A typical operation usually involves a number of small trenches or core holes and would disturb less than 0.01 acre/site. Mine development normally involves a pit or quarry, space for processing (crusher, stockpile, and occasionally an asphalt plant), and a staging area for trucks (loading and a turnaround area). Disturbance normally covers about 2 to 3 acres/ project.

Reasonably Foreseeable Development

Exploration

During the next 15 to 20 years, up to 30 exploration projects are expected within the planning area in areas of known or suspected occurrences of mineral materials. Approximately 15 projects may be conducted for sand and cinders, 10 for rock aggregate (crushable or naturally broken material), and 5 for decorative rock.

A typical sand or gravel operation would involve up to five trenches, perhaps 8 by 10 feet and up to 20 feet deep, disturbing about 100 square feet per trench, or about 0.01 acre/project; total disturbance would be approximately 0.15 acre. A typical rock aggregate exploration project would involve up to eight core holes, disturbing about 0.01 acre/hole, or 0.1 acre/project; total disturbance would be about 1 acre. A typical decorative rock exploration project would use no mechanized equipment and would be limited to surface sampling, essentially identical to a prospecting project; surface disturbance would be negligible.

Development

Sand and cinders: During the life of the plan, it is expected that 10 new sand and cinder deposits with good quality material will be developed in easily accessible areas (such as within a few miles of major roads). Site-specific assessments required by NEPA, and inventories of cultural resources and threatened and endangered species, would be conducted prior to development. Existing pits would continue to be used as much as possible, with up to 20 percent closed due to depletion. A typical development of a sand and cinder deposit would contain a pit, stockpile area, processing area (crusher, washer, screener, conveyor, and perhaps asphalt plant), truck loading and turnaround area, and about 0.5 mile of new road 20 feet wide (36 feet total disturbed width). Disturbance for each project would be 2 acres for the pit, processing, and gravel and waste stockpile and 2 acres for the access road, or approximately 4 acres/project. Total disturbance would be 40 acres.

Rock aggregate: During the life of this plan, it is expected that 5 new deposits of good quality material will be developed in easily accessible areas (such as within a few miles of major roads). When the State and County Highway Departments need additional sources of material for major projects, highway material rights-of-way will be granted under title 23 of the "Federal Highway Act" for an estimated five deposits adjacent to highways.

Like sand and cinder, rock aggregate deposits would require site-specific NEPA assessments and inventories of cultural resources and threatened and endangered species prior to development.

A typical rock aggregate quarry would be essentially the same as a sand or cinder operation and would contain a pit, stockpile area, truck turnaround and loading area, processing area (crusher, screener,

washer, conveyor, asphalt plant, etc.), and about 2,500 feet of new access road 20 feet wide (36 feet total disturbed width). Disturbance would cover 2 acres for the quarry operations and 2 acres for the access road, or 4 acres per project. Total disturbance would be 20 acres.

Decorative stone: A population increase over the next 15 to 20 years will result in a moderate increase in demand for decorative material. It is expected that five new collecting sites would be designated to meet the increase in demand. These sites would be scattered throughout the planning area and would generally be reached by existing roads. Site-specific NEPA assessments and inventories for cultural resources and threatened and endangered species would be required prior to designation.

Extraction of the material would be by surface methods only, such as loading onto pickup or flatbed trucks or pallets, by hand or by rubber-tired front-end loaders. Surface disturbance resulting from these operations would be negligible.

Appendix E

Relevance and Importance Criteria for Areas of Critical Environmental Concern in the Alturas Field Office

Appendix E

Relevance and Importance Criteria for Areas of Critical Environmental Concern in the Alturas Field Office

Relevance and Importance Criteria for Proposed ACECs in the Alturas Field Office

1. Pit River Canyon ACEC

Designation of the Pit River Canyon as an ACEC is recommended to protect this significant geographically distinctive area, to retain its current undeveloped character, high scenic values, cultural resources, sensitive wildlife species and their habitats, canyon resources, and the setting and context of the National Historic Lassen Emigrant Trail. The ACEC boundary is defined as the portion of the Pit River Canyon Wilderness Study Area that is recommended as suitable for inclusion into the National Wilderness System, and has 6,703 acres. The Pit River Canyon is geologically unique within the region with the extremely steep walled canyon and rims, and warrants special management through designation as an ACEC to protect the significant scenic, wildlife, cultural, and historic qualities of the area.

Relevance

Scenic Values

The Pit River Canyon is a unique scenic and geographically distinct feature which bisects a large basalt tableland of the Cascades/Modoc Plateau geographic province, and is unlike any other canyon complex in the region. This canyon contains many distinctive features that when combined in one area creates this unique resource on public lands. The following statements describe the notable scenic aspects of this area.

- The upper canyon has steep canyon walls with a myriad of colors from the bright lichens, and natural red and black colors of the basalt.
- The scenic quality of the area is outstanding with the vibrant colors of the canyon walls, lichen communities, and changing colors of the seasons. The fall colors are a blaze of yellows, oranges and reds, due to the deciduous Oregon white oak and mountain brush communities.
- The lower portion of the canyon has huge flows of black basalt, which run from the rims to the canyon floor.
- Riparian species of intense greens, line the Pit River water course within the inner canyon of the Pit. Horse Creek enters the main canyon from the east, has a dense, diverse, and unique sedge (carex) and Oregon Ash dominated riparian community in the confined floor of the canyon.
- Canyon depths vary from a few hundred feet deep to over 1000 feet deep. The widest canyon width is upwards of one-half mile rim to rim, with scattered Ponderosa and Jeffery pine dotting the landscape.

Historic Values

Significant cultural resources add to the outstanding character of the Canyon, with many prehistoric and historic sites that are potentially eligible for the National Register of Historic Places. The National Historic Lassen Emigrant Trail passed through the ACEC on the plateaus east and west of Pit River Canyon, as access through the Canyon was impossible. The emigrants used the east branch for a shorter, but rockier route, or the longer and easier route to the west which required two crossings of the Pit River. The 1848 Lassen Trail was used as one of the early emigrant routes to California, use increased dramatically after the discovery of gold in California. The Lassen Trail left the Oregon Trail at Fort Hall, Idaho, crossed the notorious Black Rock Desert and High Rock Canyon complex, and entered California near Fort Bidwell, California. The trail followed the Pit River to the Little Valley area, and eventually made its way through the Sierra Nevada Mountains to the Sacramento Valley of California.

The trail was pioneered by Peter Lassen, used by Emigrants, as well as the military as a supply and patrol route between the Warner Mountains and Chico, California.

Importance

Regional Significance

The scenic values of the Pit River Canyon are unique throughout the region. There is no other canyon in the region or Northeastern California that has the multitude of resource values and the magnitude of the geological and scenic qualities of the Pit River Canyon. The Canyon is visually distinct and unusual in the mixture of geologic formations, depth and steepness of the canyon walls for the entire 13 mile length of the Canyon. The Pit River Canyon and Horse Creek Canyon are unchanged visually from the way they appeared during prehistoric occupation, time of the Lassen Trail, and present day. Visitors seeking back country discovery experiences have the unique opportunity to travel through and experience this rugged and dramatic canyon complex which is much the way it was when the Emigrants and the U.S. Army traversed the area using the Emigrant roads for wagons and cavalry patrols over 150 years ago.

Protection of the Canyon as it is will afford people interested in backcountry travel, sightseeing, and history opportunities to travel through the Pit River Canyon country on the present rough rocky roads. This rugged experience will give visitors an excellent opportunity to enjoy BLM public lands and learn about regional history tied one of the early day Emigrant Trails to California.

Heritage tourism and sightseeing are in the top ten activities that Americans now enjoy (Roper-Starch, 2000 survey for the American Recreation Coalition).

Vulnerability to Change

At present the Pit River Canyon and Horse Creek are within the Pit River Canyon WSA and are protected under WSA status. 6,703 acres of a total of 10,984 acres within the WSA are recommended as suitable for inclusion into the National Wilderness System. If congress released the WSA from interim protection, the Pit River Canyon would need another designation to protect these important resources and the existing character of the Canyon. In this age of critical water supplies, dam construction would probably be considered if the WSA status was lifted from the Canyon. Until the early 1980s, the Bureau of Reclamation had a power site withdrawal on the Canyon for a potential dam. This Pit River Canyon withdrawal was released when another site upstream was selected for the dam site. During preliminary studies the site upstream was discarded due to geologic instability, which makes it even more critical for protection of the Pit River and the unique associated resources. The wildlife resources include critical habitat for wintering populations of deer, and pronghorn, as well as a high density of cliff nesting birds of prey. Birds of prey include: Prairie Falcons, Redtail Hawks, American Kestrels, Barn Owls, and Golden Eagles. Birds of prey within the Pit River Canyon could be in jeopardy from various power generation projects if interim WSA protection status was lost. The existing Malacha Hydro Project diverts flows during the winter and early spring high flow regimes and is located upstream of the Wilderness Study Area. The power plant is located 15 miles downstream from the diversion point, and is immediately west of the WSA boundary. Overtime the Trail has been impacted from utility corridor construction, road construction, forestry, and range management practices and facilities.

Special Management Attention

Special Management of the Canyon complex is warranted under an ACEC designation to assure that the current undeveloped character of the canyons remains unchanged. The area is highly scenic and is managed to meet BLM Visual Resource Management Class I due to WSA status. The Canyon was also rated based on its own merits and rated as VRM Class II. The National Historic Lassen Emigrant Trail is managed as VRM Class II as mandated by Congressional action. These VRM Class objectives require retention of the character of the existing landscape.

Designation of most of the area adjoining the Pit River Canyon is recommended for designation as primitive under the Recreation Opportunity Spectrum classifications proposed in this RMP. If these areas are released from WSA status by act of Congress, it is the intent of designating them as primitive to continue management of this area for the road less character. This designation would help retain the undeveloped character of the area currently enjoyed by hikers, hunters, fishermen, and backcountry sightseers who use the Pit River Canyon country. Protection of the Lassen Trail is included in the proposed action in this RMP under provision of the Historic Trails and Visual Resources Management portion of this RMP. California Department of Forestry and Fire Protection has fire protection over the area of the proposed ACEC and associated resources. Close coordination is required with fire management activities and agencies to prevent impacts from fire protection activities to these sensitive resource values. The intake and diversion point of the existing Malacha Hydro Project is located upstream of the Wilderness Study Area, diverts flows during the winter and early spring high flow regimes, while the power plant is located immediately downstream of the WSA. Coordination is important with the Malacha project to insure there are no impacts to the WSA/ACEC and associated resource values. Designation of the area as an ACEC would give further management emphasis to retain the existing character of the area under VRM Class II, or VRM Class I if the Pit River Canyon is included in the National Wilderness System. These objectives would protect both scenic and historic values of this unique area.

2. Lava ACEC

Designation of the Lava ACEC is recommended to protect this significant geographically distinctive area, to retain its current undeveloped character, as well as to protect geology, sensitive cave resources, high scenic values, sensitive plant and wildlife species and their critical habitats, and the setting and context of the Baker Toll road and the Lockhart Wagon road. Segments of the National Historic Lassen Emigrant Trail may also be present in the Lava ACEC. The sensitive plants focus on the sensitive plants Bogg's Lake hedge-hyssop (*Gratiola heterosepala*-GRHE) and profuse flowered pogogyne (*Pogogyne floribunda*-POFL). The GRHE is associated with vernal pools and shallow pit reservoirs on the east side of the proposed ACEC. The POFL is associated with vernal moist depressions in the SW part of the existing WSA. The vegetation growing among the lava outcrops contain floristic elements from the Cascade Range foothills and the Great Basin. There are mixed plant associations of western juniper, grey pine, Brewer's oak, wedgeleaf ceanothus, low sagebrush, and native perennial grasses and forbs. Much of the area has never been explored or inventoried. The proposed ACEC area has unique lava flows, broken lava tube formations, and two well known caves with one designated as a significant cave. Sensitive cave resources are found in the larger caves. The lava areas have been identified as a special place for the Pit River Tribe. The ACEC boundary is defined as the entire 10,770 acre Lava Wilderness Study Area, and is recommended as suitable for inclusion into the National Wilderness System. Within the proposed Lava ACEC are steep small canyons with twisted and molten lava formations, and a few roads on the perimeter of the lava, which adds to the scenic quality of the area. The proposed Lava ACEC is geographically unique and outstandingly scenic within the region and warrants special management through designation as an ACEC to protect the unique scenic, wildlife, geologic, and historic values of the area.

Relevance

Scenic Values

The proposed Lava ACEC is a unique and distinct lava flow feature; with canyons, fissures, caves, broken lava tubes and scattered islands of pine, juniper, mountain mahogany, and associated vegetation. This lava field is located in relatively large basalt tableland of the Cascades/Modoc Plateau geographic province, and is similar to the cinder cones and buttes of the Hat Creek rim to the south, and the Lava Beds National Monument to the north.

These lava flows are fairly unique and unlike other basalt flows in the region. This area contains many distinctive features assembled in one area to create a highly unique and scenic area. The following statements describe the notable scenic aspects of this area.

- The lava canyons and fissures and flows have a myriad of colors from the bright lichens, and natural red and predominately black colors of the basalt.
- The scenic quality of the area is outstanding with the vibrant colors of the, lichen communities, and the changing colors of the seasons. The fall colors are a blaze of yellows, oranges, and reds, due to the deciduous Oregon white oak and mountain brush communities, which are intermingled with the various shades of green from the pine and juniper.
- The texture of the lava is quite distinct with its swirls, flow patterns, and sharp broken volcanic rocks.

Historic Values

Significant cultural resources add to the outstanding character of the area, with some prehistoric and historic sites that are potentially eligible for the National Register of Historic Places. The Baker Toll road passed through the ACEC on the western edge of the area. The emigrants used the Baker Toll road to bypass the lava enroute to Fall River Mills. The 1848 National Historic Lassen Emigrant Trail passed nearby to the east, and may possibly be located on a portion of the proposed ACEC. The Lassen Trail was used as one of the early emigrant routes to California, and use increased dramatically after the discovery of gold in California. The Trail followed the Pit River and eventually made its way through the Sierra Nevada Mountains to the Sacramento Valley, of California. The trail was pioneered by Peter Lassen, used by Emigrants and the military as a supply and patrol route between the Warner Mountains and Chico, California.

Importance

Regional Significance

The scenic values of the proposed Lava ACEC are unique throughout the region. There are only a few lava fields that exhibit these unique features. The canyons, fissures, lava tubes, and flows are visually distinct and unusual in the mixture of texture, formation, and expanse within a geologically distinct area. The lava fields and formations are unchanged from the time of their development, as the volcanism and rugged nature of the lava has prevented human intrusions except on the periphery of the lava. The Baker Toll road is fairly intact on BLM, with no changes, and appears as it did during the time when it was used by pioneers and emigrants. Visitors seeking back country discovery experiences have the unique opportunity to travel along a historic toll road and experience this rugged and dramatic landscape, much the way everything was when wagons and cavalry patrols used the area over 150 years ago.

Protection of the unique lava field and historic toll road as they are, affords people interested in backcountry travel, sightseeing, and history opportunities to travel through the proposed Lava ACEC on the present rough rocky road. This will give visitors an excellent opportunity to enjoy BLM public lands and learn about geology and regional history tied to the Fall River Mills area.

Interest in history is increasing as our population ages and more people of retirement age seek to explore and learn about our history. Heritage tourism and sightseeing are in the top ten activities that Americans now enjoy (Roper-Starch, 2000 survey for the American Recreation Coalition).

Vulnerability to Change

There have been several requests to improve access to private property adjacent to the Baker Toll Road. Improvement requests have been denied due to the historic nature of the Baker Toll road.

A major subdivision is located immediately to the west of the proposed Lava ACEC; as such many activities take place on public land. With the close proximity of the subdivisions, fire suppression activities by the California Department of Forestry and Fire Protection need to be closely coordinated to prevent impacts to this historical resource and unique geological area. The Lava WSA/ Lava ACEC is protected under the BLM Interim Management Policy for Wilderness Study Areas created by Congressional action. The WSA was not originally recommended for wilderness designation by BLM, but after additional consideration the WSA was recommended as suitable for wilderness, and a wilderness study report was completed for the area. The Lava ACEC would require other protection measures if congress released the area from wilderness consideration.

Special Management Attention

Special Management of the lava complex is warranted under an ACEC designation to assure that the current undeveloped character of the area remains unchanged. The area is highly scenic and is proposed to be managed to meet BLM Visual Resource Management Class I objectives due to WSA status, which requires retention of the character of the existing landscape. The surrounding landscapes are designated as VRM Class II, and most of the area is recommended for designation as primitive area under the Recreation Opportunity Spectrum classifications proposed in this RMP. If this area is released from WSA status by Congress, it is the intent of designating them as primitive to continue management of this road less area adjoining the Baker Toll Road. This designation would help retain the undeveloped character of the area currently enjoyed by hunters and backcountry sightseers who use the proposed Lava ACEC area. Protection of the Baker Toll Road is also proposed as part of the proposed action in this RMP under provision of the Historic Trails and Visual Resources Management portion of this RMP. Designation of the area as an ACEC would give further management emphasis to retain the existing character of the area under VRM Class II objectives for protection of both scenic and historic values.

3. Emigrant Trails ACEC

The Emigrant Trails ACEC is recommended as an ACEC to protect significant and historically distinctive areas for the retention of their current undeveloped character, and high scenic and historic values. The proposed Emigrant Trails ACEC covers approximately 29 linear miles of National Historic Trails and 9,984 acres of landscape. The ACEC is comprised of the Lassen and Applegate National Historic Trails, and the Yreka Trail which is in the process of being designated a National Historic Trail. Also addressed are other historic roads such as the Burnett Road, the Lockhart Wagon road, Baker Toll road, and military routes such as the Fort Crook to Fort Bidwell road, as well as other associated military patrol routes. Many of these historic roads exhibit class 1 (pristine) segment and need protection and interpretation. Due to the unique linear alignments covering long distances and mixed ownerships, these historic trails are susceptible to impacts, and have been impacted by timber harvest, livestock grazing practices, energy and transportation corridors.

Relevance

Scenic Values

The scenic qualities are diverse and spectacular within the areas proposed for the Emigrant Trails ACEC, as the Trails span the field office landscape north to south and east to west. The scenic quality of the area is outstanding with the vibrant colors of the changing fall vegetation in the southern portion of the area. The fall colors are a blaze of yellows, oranges, and reds, due to the deciduous Oregon white oak and mountain brush communities. Whereas the northern portion of the field office has tremendous long range vistas and panoramas, with dynamic geologic formations, and multi-colored valley bottoms.

At the Descent into Goose Lake where the Applegate/Lassen Trail descends into the Goose Lake Valley, the vistas are spectacular for 50 miles in each direction. In the southern portion of the field office, the Lassen Trail has branches on each side of the Pit River Canyon, and the views into the canyon are superb. Whereas, on Devils Garden where the Applegate Trail descends into the Tulelake Basin, the panorama of Mt. Shasta, the Medicine Lake Highlands, the Lava Beds National Monument, and the colors of the agricultural lands in the Tulelake basin are camera ready. To the west, the Applegate Trail follows along the south edge of the Lower Klamath Marsh, with excellent vistas of Mt. Dome, the Klamath Basin and incredible wildlife viewing associated with the marsh. These vistas and panoramas of the Emigrant Trails are unique, and some of the most spectacular scenery in Northeastern California.

Historic Values

Significant cultural resources add to the outstanding character of the proposed Emigrant Trails ACEC, with many prehistoric and other historic sites that are potentially eligible for the National Register of Historic Places.

Early Euro American exploration in the 1820's-1840's, by the Hudson Bay Company, and American explorers such as John Charles Fremont, used trails which criss-crossed the public lands. Some of these sites and trails have been identified and are potential candidates for interpretation.

The 1846 National Historic Applegate Trail was pioneered from Oregon easterly by the Applegate brothers and Levi Scott. The National Historic Applegate/Lassen Trail that descends into the Goose Lake basin from the Warner Mountains is the locale where these two important Trails parted. Near Davis Creek, California, the Lassen Trail continues south to the California goldfields and the Applegate Trail northwest to fertile farmlands of Oregon.

The 1848 National Historic Lassen Emigrant Trail entered the field office lands in the northeast corner near New Pine Creek, followed the Pit River to the southwest corner near Little Valley, and eventually made its way through the Sierra Nevada Mountains to the Sacramento Valley, of California. The Lassen Trail was used as one of the early emigrant routes into California, and use increased dramatically after the discovery of gold in California. The trail was pioneered by Peter Lassen, used by Emigrants and as a supply and patrol route for the U. S. Army between the Warner Mountains and Chico, California.

Both the Lassen and Applegate Trails left the famed Oregon Trail at Fort Hall, Idaho, crossed the notorious Black Rock Desert and High Rock Canyon complex, and entered California near Fort Bidwell, California.

The 1852 Yreka Emigrant Trail branched off of the Applegate Trail west of the Lower Klamath Marsh, passed through Red Rock Valley and on to Yreka and the Siskiyou Country goldfields. The 1848 Burnett Road located on the eastern edge of the Tule Lake Basin, connected the Applegate Trail (i.e., the Southern Road to Oregon) to the California Trail, north of Lookout, California. The Tichnor Road was constructed in 1871/1872 to connect Yreka, California, to Alturas, California, and followed or used segments of the original Yreka Emigrant Trail.

U.S. Army exploration parties were present from the 1840s to the 1870s, when settlement began. Segments of General George Crook's route to the 1867 Battle of the Infernal Caverns have also been identified, but not totally mapped. A portion of the Military Road from Fort Crook to Fort Bidwell lies on public lands, other Military patrol routes generally followed the Emigrant Roads and segments of these routes are also located on public lands.

Importance

Regional Significance

The scenic values and Trail traces of the proposed Emigrant Trails ACEC are unique throughout the region. Much of the early Emigrant Trails have been lost over the years due to; agricultural development, timber harvest, highway and road construction, erosion, subdivisions, livestock grazing management and facilities. One thing that makes this ACEC unique is that the resource spans the field office landscape, is located in discrete locations, and is a linear feature on the public lands of the field office. The proposed Emigrant Trails ACEC is visually distinct and unusual due to the remote character of the BLM lands that possess trail traces, whereas in more populated areas most of the trail traces have disappeared due to a variety of impacts. In some locations, such as portions associated with the Pit River Canyon and Red Rock Valley, the Trails are unchanged visually from the way they appeared during times of heavy use on the Emigrant Trails, to present day. Visitors seeking back country discovery experiences have the unique opportunity to travel through the public lands, and experience these rugged and dramatic landscapes with the associated trail traces. Some of the trail traces and landscapes appear much the way they were when Emigrants and the U.S. Army traversed the area on these roads with wagons and cavalry patrols over 150 years ago.

Protection of these historic trails afford people interested in backcountry travel, sightseeing and history opportunities to travel through exciting landscapes and vistas of the Pit River Country, Devils Garden plateau, and the marshlands of Lower Klamath Marsh. Visitors will have an excellent opportunity to use the present rough and rocky roads, enjoy BLM public lands, and learn about regional history tied to the early day Emigrant Trails of California.

Heritage tourism and sightseeing are in the top ten activities that Americans now enjoy (Roper-Starch, 2000 survey for the American Recreation Coalition).

Vulnerability to Change

Trails have been impacted from past activities for; utility projects and utility corridor construction, transportation systems, forestry, and range management practices and facilities. At present, segments of the Lassen Trail are located within the Pit River Canyon WSA, and are protected under WSA status. The Pit River WSA (6,703 acres) is recommended as suitable for inclusion into the National Wilderness System. If congress released the WSA from interim protection, the Pit River Canyon WSA would need another designation to protect these important resources and the existing character of the canyon. Areas that contain trail resources with a National Historic Trail designation, have protection legislated by congress. However, on Historic Trails with no designation management protection is needed to fully protect these fragile resource values.

Special Management Attention

Special Management of the Emigrant Trails are warranted under an ACEC designation to assure that the current undeveloped character of the designated and undesignated Historic Trails remain unchanged. The areas associated with the Trails are highly scenic, and designated National Historic Trails are protected under legislation for Emigrant Trail Management, and are managed to meet BLM Visual Resource Management Class II. However, other Historic Trails that are not designated as a National Historic Trail do not qualify for the nationally legislated protection, but are afforded some protection under other acts related to cultural resource management. California Department of Forestry and Fire Protection has fire protection over much of the area that contain historic trail resources. Close coordination is required with fire management activities and agencies to prevent impacts from fire protection activities to these sensitive historical resources. The intake and diversion point of the existing Malacha Hydro Project is located upstream of the Wilderness Study Area, diverts flows during the winter and early spring high flow regimes, while the power plant is located immediately downstream of the WSA.

Coordination is important with the Malacha project to insure there are no impacts to Trail segments that are in close proximity to hydro development facilities, roads, or other needed maintenance activities associated with the hydro project. Current VRM Class ratings on historic trails vary from Class I on the Lassen Trail within the Pit River Wilderness Study Area, to Class III in other areas. VRM Classes I and II objectives require retention of the character of the existing landscape. Designation of most of the area adjoining the Pit River Canyon is recommended for designation as primitive areas under the Recreation Opportunity Spectrum classifications proposed in this RMP. If these areas are released from WSA status by Congress, it is the intent of designating them as primitive to continue management of this area for the road less character. An ACEC designation would fully protect all Historic Trails within the field office boundaries. This designation would help retain the undeveloped character of areas with trail resources currently enjoyed by hikers, hunters, fishermen, and backcountry sightseers who use public lands associated with historic trails. Protection of the Trails is included in the proposed action in this RMP under provision of the Historic Trails and Visual Resources Management portion of this RMP. Designation of the area as an ACEC would give further management emphasis to retain the existing character of the area under VRM Class II objectives for protection of both scenic and historic values.

4. Juniper Creek ACEC

Description and Values: The proposed Juniper Creek ACEC is located on the southeastern border of Big Valley, approximately 3.5 miles southeast of Bieber, California. It covers approximately 1182 acres including and surrounding the riparian area of the creek. Juniper Creek is a seasonally inundated water course that supports a thriving riparian plant and animal community. Surrounding the riparian area is juniper woodland, shrubs including sagebrush and rabbitbrush, as well as a low growing perennial plant community. Average elevation for the proposed ACEC is approximately 4300 feet.

The area was the focus of prehistoric and historic occupation and subsistence activities, with several prehistoric sites found within the vicinity, in addition to the remains of an historic structure. Research has been limited in the area, but examination by archaeologists in the 1980's uncovered important sites that could provide information regarding prehistoric land use patterns and boundary issues.

An enclosure was built in the 1980's to protect a portion of the riparian area, as well as a number of important cultural sites. However, the area is primarily unfenced, with the exception of the above mentioned enclosure and a boundary fence that crosses to the south side of the creek and then runs southeast to the US Forest Service boundary. The area is located within an existing grazing allotment, and is accessed by a single two-track road. It is open to livestock grazing and OHV use, except where enclosures preclude such use.

Relevance

The Juniper Creek ACEC meets the relevance criteria in the following ways: it is the locus of significant cultural resource values as evidenced by the high density of archaeological sites, the variety of sites and their time depth, this makes the area important for the study of prehistory in the Modoc Plateau; it supports a Bald Eagle roosting site and is located within critical pronghorn antelope winter range; the riparian community is a micro-ecosystem that supplies forage and water for wildlife, as well as supplying water for irrigation to the local human community.

Importance

The Juniper Creek ACEC meets the importance criteria in the following ways: cultural resources identified within the ACEC have been determined to be eligible for the National Register of Historic Places (NRHP), these resources are sensitive and irreplaceable; as a roosting site for Bald Eagles, it is a rare and sensitive area that requires special management considerations; as a riparian community it is irreplaceable and critical to meeting the needs of both wildlife and humans.

The proposed ACEC is readily accessible, and offers good opportunities for research and educational pursuits, in addition to an interpretive area.

Juniper Creek meets the need for a special management area due to the fact that current management activities are not protecting important cultural, biological and riparian resources.

5. Timbered Crater ACEC

Designate the Timbered Crater Wilderness Study Area (WSA 17,896 acres) as the Timbered Crater ACEC/RNA to protect, enhance and maintain Baker's Cypress, to protect the Green Place vernal pool, and to protect vast expanses of unique lava formations. The Baker's Cypress in the Timbered Crater WSA is the largest stand known in the world, covering approximately 4,246 acres. Baker's Cypress is a California Native Plant Society (CNPS) List 4 species and the Baker's Cypress plant association is a rare plant community (California GAP Analysis, 1998). Both Baker's Cypress and the associated knobcone pine are fire dependent species. The Green Place vernal pool is designated Critical Habitat (FWS, 2002) for the Federally Listed Threatened plant, slender Orcutt grass. The WSA has a Class I Visual Resource Management classification, contains several Bald Eagle territories, numerous caves and potentially unmapped caves containing Sensitive bat species, and a culturally significant Native American trail. The Baker Cypress Natural Area was designated as an Instant Study Area/Natural Area; it is 1,148 acres (see Special Management Areas). Currently only 500 acres of the Timbered Crater WSA are permitted for livestock grazing; the remaining is unsuitable for grazing.

The AFO would coordinate with the Lassen National Forest (this portion of the Shasta-trinity NF is administered by the Lassen NF), for possible designation of the Baker's cypress within NF lands as an RNA. There would be potential to write and implement an interagency HMP for a BLM/USFS RNA. Further refinement of the extent of the Baker's cypress would be conducted through inventory; any changes would be mapped on the AFO GIS layer.

Relevance

The Timbered Crater area is a unique combination of geology, wildlife, and flora. The proposed ACEC/RNA has large expanses of lava with numerous undocumented lava tubes and caves. The landscape provides a striking contrast with Fall River Valley and Ahjumawi Lava Springs State Park. The Baker's cypress and knobcone pine plant associations are mostly undisturbed by human activities and could provide research opportunities on plant floristics, plant community dynamics, and fire effects studies. The WSA has Bald Eagle nesting and roosting sites. The lava caves have the potential to contain sensitive bat species and rare mosses. The southern part of the proposed ACEC/RNA could provide primitive recreational opportunities in the form of hiking trails linked with trails in Ahjumawi Lava Springs State Park.

Importance

The Green Place vernal pool (northern basalt flow vernal pool community, a rare plant community), bald eagle nests, and the largest stand of Baker's cypress warrant protection. The lava caves need to be inventoried for sensitive species. The Baker's cypress-knobcone pine association is a fire dependent plant community and under the preferred alternative for the Draft RMP this area would be designated as Wildland Fire Use; fire would be used as a tool to maintain the plant association. There is reported to be a pre-historic Native American Trail that runs through the proposed ACEC/RNA; the trail would be inventoried and research would be conducted. The visual resources are significant for the communities of the Fall River Valley and other public land users.

Vulnerability to Change

The communities of Fall River Mills, McArthur, Burney and outlying communities in the Fall River Valley are growing. Farming and ranching has fragmented wildlife habitats. More homes are being built on the edge of the Public Lands and demand for recreation is increasing. The Timbered Crater WSAs (viewable from the Fall River Valley), was not recommended for wilderness designation. There have been intrusions from fire suppression forces into the WSA, dozer lines became roads, and private lands within the WSA have been proposed to be harvested for timber.

6. Beaver Creek ACEC

Description and Values: The proposed Beaver Creek ACEC is located approximately 7 miles southeast of Fall River Mills, California. It covers approximately 972 acres through and adjacent to the Beaver Creek drainage. This portion of the Beaver Creek system is a seasonally inundated watercourse that is supplemented by a number of year round springs. The area supports a riparian plant and animal community, juniper woodlands, grasslands and various shrubs in addition to a low growing perennial plant community. Elevation within the proposed ACEC ranges from 3700 to 4000 feet.

The area was the focus of prehistoric and historic occupation and subsistence pursuits, as evidenced by the numerous archaeological sites located within the proposed ACEC. These sites range from small prehistoric task sites to larger occupational sites, to historic ranch remains. A research project undertaken in the 1980's found that occupation within the area had been continuous for at least the last 6000 years (Manuel 1989).

The area is primarily unfenced, save for pasture and allotment fencing constructed for the purposes of rangeland management. The area is located within an existing grazing allotment, and is accessed by a number of two track roads, as well as a county maintained road and a forest service improved road. The proposed ACEC is currently open to livestock grazing and OHV use.

Relevance

The Beaver Creek ACEC meets the relevance criteria in the following ways: as a locus of prehistoric activities, sites found within the area are fragile and irreplaceable, and represent an opportunity to inform researchers on numerous issues important to the study of early human occupation, in addition to its importance within the Native American community; as a riparian ecosystem, it represents an important source of water and forage for wildlife.

Botanically, the Beaver Creek area is unique in that it has floristic elements from both the Cascade Range and the Great Basin. Being on the western edge of the Modoc Plateau there are assemblages of low and big sagebrush, western juniper, and Thurber's needlegrass growing with Oregon white oak, wedgeleaf ceanothus, red bud, and Lemmon's needlegrass. The diversity of vegetation was probably a factor for the large number of prehistoric and historic sites in the area.

There are portions of Beaver Creek that are characterized by narrow steep canyons with riparian vegetation that includes Pacific willow, Oregon ash, Wood's rose, Louisiana sagewort, panicled bulrush, and chamisso sedge. The riparian vegetation is in sharp contrast to the upland vegetation and the lichen covered rimrock. Along with the upland species listed above, there are scattered old growth juniper trees on the rocky rims above Beaver Creek, some estimated to be over 500 years old.

Importance

The Beaver Creek ACEC meets the importance criteria in the following ways: cultural resources identified within the area have been determined to be eligible for the NRHP, and potentially represent some of the most important sites within the Modoc Plateau; the riparian community is sensitive and requires additional measures to protect the water and plant resources found within the area.

Local Significance

The scenic values are unique for this region. Depending on the vista point there are views of the entire Fall River Valley, Mt. Shasta, and Lassen Peak. The geography has cultural and modern day significance—aboriginal peoples and modern man could see a variety of vegetation, from true wetland to pine forest, as well as wildlife species ranging from waterfowl, pronghorn, mule deer, various raptors, and black bears.

Vulnerability to Change

The communities of Fall River Mills, McArthur, Burney and outlying communities in the Fall River Valley are growing. Farming and ranching has fragmented wildlife habitats. More homes are being built on the edge of the Public Lands and demand for recreation is increasing. The Timbered Crater and Lava WSAs are both viewable from the Beaver Creek area, with the Lava WSA recommended for wilderness designation, and Timbered Crater was recommended as nonsuitable. The Timbered Crater is proposed as an ACEC/RNA. Increased urbanization could negatively impact the view shed. The Beaver Creek ACEC would ensure an unspoiled landscape and provide more semi-primitive recreational and research opportunities.

The Beaver Creek ACEC has been identified for special management due to the fact that current management practices have not been sufficient to protect the valuable cultural resources within the area.

7. Tablelands/Yankee Jim/Fitzhugh Creek ACEC

Description and Values

The Tablelands/Yankee Jim/Fitzhugh Creek ACEC is located within the area known as the Likely Tablelands and lies approximately 10 miles southeast of the town of Alturas, California. It covers approximately 27,435 acres including and surrounding the drainage of Fitzhugh Creek, the complete ranch parcel and the easternmost portion of the Likely Tablelands. Fitzhugh Creek is a perennial watercourse that is a tributary to the Pit River system. It supports an important riparian community, Modoc-Great Basin Cottonwood-Willow Riparian Forest, in addition to remnant Ponderosa Pine stands, juniper woodlands, grasslands and shrub communities. The Yankee Jim Ranch portion supports a seasonally inundated wet meadow system, surrounded by juniper and pine woodlands. Several springs can be found in the uplands surrounding the ranch property, each contributing to the lush meadows, with a locally rare (public lands) fen meadow near the ranch house that is surrounded by a stand of Lemmon's willow. The rim of Fitzhugh Creek and the property surrounding the ranch area support geophytic plant communities such as yampa (*Perideridia* spp.), biscuit root (*Lomatium* spp.) and camas that were utilized intensively by Native American groups inhabiting the area. The southwestern portion of the Tablelands encompasses large grassland that has been essentially replaced by invasive medusahead.

Areas within the ACEC possess juniper woodland and sagebrush steppe ecological systems. Elevation ranges from 4600 to 5300 feet across the ACEC.

The Likely Tablelands were the focus of intensive prehistoric occupation and subsistence pursuits. Numerous prehistoric sites have been located in the area and across the Tablelands. Some of the finest and most well preserved examples of rock art can be found within the proposed ACEC, as well as a number of habitation locales, special task sites and storage features. The historic component of Yankee Jim Ranch consists of a turn of the century ranch house, corrals and the remains of several outbuildings. There are a number of stone and barbed wire fences dating from the active period of use of the original ranch property. The Historic component of Fitzhugh Creek consists of various water improvements, as well as stone and barbed wire fencing. The historic component of the Tablelands consists of an historic ranch area, numerous water improvements in addition to stone and barbed wire fences. Although research has been relatively limited within the immediate area, recent evaluations have identified a number of sites near Fitzhugh Creek and at several places in the Tablelands that are potentially eligible for the NRHP; the Yankee Jim portion qualifies as a significant archaeological district that is NRHP eligible.

The Tablelands/Yankee Jim/Fitzhugh Creek ACEC lies within existing rangeland allotments. Livestock are allowed access under current permits. A number of range improvement projects have been proposed and implemented within the proposed ACEC, and include water developments, pasture fences, exclosures and gap fencing. Livestock have been excluded from the Fitzhugh Creek watercourse proper, and only have access to the creek at various gap locations during times of drought. However, stock are allowed along the north and south rims of Fitzhugh Creek, in the ranch parcel and across the Tablelands. Two hundred acres of meadows in the Yankee Jim Ranch, and all of Fitzhugh Creek are closed to OHV use. The Tablelands are open to OHV use except where fencing precludes access. The Tablelands/Yankee Jim/Fitzhugh Creek ACEC is accessible only by rugged four wheel drive roads that are inaccessible during inclement weather.

The proposed ACEC is currently the focus of a various recreational opportunities, including the seasonal hunting of ungulates and waterfowl, as well as seasonal coldwater fishing.

Relevance

The Tablelands/Yankee Jim/Fitzhugh Creek ACEC meets the relevance criteria in the following ways: the high density, complexity and time depth of the prehistoric sites represents an invaluable opportunity for research and preservation goals; Yankee Jim Ranch is one of the oldest parcels of homesteaded property within the Alturas area, and the existing ranch house is the only standing ranch building within the Likely Tablelands; the large petroglyph component that is present within the ACEC area, has concentrations that are some of the largest and potentially most important rock art sites within the Alturas Field Office jurisdiction; the combination of rock art, task specific sites and occupation areas within the Tablelands portion makes it an ideal laboratory in which to study themes relevant to NRHP designations. In addition to high cultural resource values, the ACEC also includes critical deer winter range, deer and antelope fawning/kidding grounds, and sage grouse habitat. The riparian areas provide important forage and water for wildlife. The hydrologic and scenic values inherent in the wet meadows, seasonal and perennial water courses in the ACEC are unique to the area and are especially important.

There are at least 6 different riparian plant associations in the Yankee Jim area including Nebraska sedge, meadow barley-Nevada bluegrass, Nebraska sedge/meadow barley/Baltic rush, clover-monkey flower/meadow barley, mixed sedge/grass/forb, and lesser panicled sedge. The presence of the fen meadow is unique for the Alturas Field Office, as only a few are present on public lands. The large concentration of wetland plants includes both obligate and facultative wetland species.

The upper meadow system was formed by a fault that runs north-south, creating a contact zone with the water table. Numerous springs come out of this contact zone. The unique scenic quality and botanically diverse area was probably one attraction to the aboriginal peoples.

Importance

The Tablelands/Yankee Jim/Fitzhugh Creek ACEC meets the importance criteria in that the cultural resources identified within the area are fragile and irreplaceable resources that are eligible for the National Register of Historic Places. The Ranch environs are eligible as an historic district, with several contributing properties. Suitable sage grouse habitat has been identified within the ACEC, and the location of key fawning and kidding grounds marks this area as a unique and sensitive locale.

Special Management Attention

The need for special management has been identified during the course of field work and projects conducted within the potential ACEC. Current management of the area includes permitting livestock, which is having a significant impact on cultural, riparian, biological and visual resources. Special management of the ACEC is warranted to assure that further degradation of the archaeological district does not occur; in addition to protecting the biological, botanical and riparian values identified in the area. Management actions outside the normal range of management practices may be necessary to reduce impacts to all resources within the ACEC. These actions could include the following: reduction in numbers of livestock, exclusion of livestock from areas that are important concentrations of resources or the implementation of special grazing systems.

Vulnerability to Change

The Yankee Jim portion of the proposed ACEC (1400 acres) represents one of the most archaeologically important and sensitive areas under Field Office Management. Sites within this area have little protection from primary impact agents such as livestock and the illegal collection of artifacts. If these impacts are not addressed, it is likely that the elements that make this an NRHP eligible district will be lost.

8. Mt. Dome ACEC/RNA

Designate the Mt. Dome ACEC/RNA. This 1,510 acre area contains an isolated stand of ponderosa pine, the sensitive plant little rice grass (*Oryzopsis exigua*), native grassland communities of bluebunch wheatgrass (*Pseudoroegneria spicata*) and Thurber's needlegrass (*Achnatherum thurberianum*), a critical winter Bald Eagle roost site, and a Class II Visual Resource Management classification. There is also an occurrence of the sensitive plant Baker's globemallow (*Iliamna bakeri*) on the NW part of the proposed ACEC/RNA. The unique feature of Mt. Dome is that it is an uplifted fault block that can be seen from as far away as the Warner Mountains. The AFO would coordinate with the Modoc National Forest for a potential interagency RNA. There are 2 grazing permits that fall within the proposed ACEC/RNA; the majority of the lands on Mt. Dome proper are inaccessible to livestock grazing. The portion of the proposed ACEC/RNA that contain the bluebunch wheatgrass and Thurber's needlegrass communities are within the West Dome grazing allotment; current grazing practices have no negative effect on the perennial grasslands on the upper slopes of the mountain. Under this proposal, monitoring plots would be established on the lower slopes of the mountain to determine if grazing is having any impacts to the perennial grass communities.

Relevance

Mt. Dome is a dominant landmark that can be seen throughout much of the Modoc Plateau and southern Oregon. The top of Mt. Dome is unique due to the presence of Ponderosa pine and plant species common to not only the Modoc Plateau but the Southern Cascades and Columbia Plateau.

The mid to upper slopes of the mountain contain an assemblage of undisturbed native perennial grasses; this native grassland offers research opportunities. Research potential is immense; inventories, mapping, community descriptions, and ecological and genetic studies would be invaluable for this unique area of the Alturas Field Office

Importance

The basalt talus fields have an occurrence of the sensitive plant, little rice grass; this is only one of two locations in California of this plant. Bald Eagle roosting sites are a critical part of the eagles range throughout the Tule Lake, Klamath basin, and Butte Valley regions. The high scenic values need to be protected for public land users and the communities of the Tule Lake and Butte Valley.

9. Old Growth Juniper ACEC/RNA

Designate the Old Growth Juniper ACEC/RNA. These 2 areas form the ACEC, cover 3015 acres, and contain old growth juniper stands that are estimated to be in excess of 1,000 years old. Old growth juniper is a high priority for the AFO and these areas need protection from surface mineral extraction, wood cutting, and road construction. The proposed ACEC/RNA would serve as an area for research into old growth stand dynamics and genetic studies. The areas also contain numerous species of lichens and mosses that need to be identified and studied for their role in these extremely cobbly to very stony juniper/low sagebrush associations. There is very little information on lichens in these community types; it is unknown whether any are sensitive. Sheep Valley is 2,025 acres and Ticker Spring is 1,090 acres. The proposed ACEC/RNA are currently permitted for livestock use. These areas receive little livestock use due to low forage production.

Relevance

The proposed ACEC/RNA are two examples of nearly pristine old growth western juniper. These areas could provide opportunities for research and other ecological studies on old growth stand dynamics, juniper /shrub/perennial grass community structure, and the identification and role of lichens and other biological crusts associated with old growth as well as juniper/soil/air quality relationships. These rocky areas also contain possible relict assemblages of perennial grasses and forbs which are not found in areas preferred by livestock.

The visual aesthetics of these open savanna-like plant associations with large lichen covered rocks are some of the highest quality in the Field Office. The savanna-like juniper/shrub associations (mountain big sagebrush, low sagebrush, and bitterbrush), have high value for diverse structural diversity and wildlife habitat. The complex of lichen species found on the flat basalt rocks provide a multitude of colors that add to the scenic and biological value of the proposed ACEC/RNA.

Importance

Many of the old juniper trees are 500 to 1,000 years old, with some estimated to be approaching 2,000 years old. As Federal and State agencies and county and private entities jointly develop a comprehensive juniper management strategy for NE California, preserved/protected old growth communities would provide a baseline for biological diversity, genetic and botanic studies, and desired or potential natural plant communities. The California Lichen Society considers the lichen associations in these juniper communities to be of significant ecological interest, worth protecting. Old growth juniper woodlands would also provide opportunities for sightseeing by the general public.

Vulnerability to Change

With no significant management or protection of old growth western juniper, these plant communities would be threatened from fire, wood cutting, juniper removal for livestock forage production, and flat (decorative) rock collecting. The proposed ACEC/RNA would provide the public with old growth sites that are undisturbed. These unique biologic resources would also show the need to protect and manage other old growth juniper associations from Fall River Valley to Silva Flat to Alturas and beyond.

10. Mountain Peaks ACEC/RNA

Designate the Mountain Peaks ACEC/RNA. There are 2 distinct mountain peaks that combined together form the ACEC. The Tule Mtn portion is (985 acres) and the McDonald Mtn. area is (2515 acres). The Tule Mtn. section has plant associations of white fir, eastside pine, and aspen that are in good ecological condition; they are within a dominant mountain big sagebrush alliance. Elevation is over 7,000 feet and the area is within the Tule Mountain WSA. The McDonald Mtn. portion is at an elevation of nearly 8,000 feet and has associations of white fir, aspen, and curlleaf mountain mahogany. These associations are in good ecological condition. The eastside pine, aspen and curlleaf mountain mahogany communities are high priority communities for inventory by the CNDDB and BLM; the mahogany is a priority for conservation. The Tule Mtn. area needs to be inventoried to confirm if the alliance is eastside or Jeffrey pine. There are four Jeffrey pine associations that could occur on Tule Mtn. and are a high priority for inventory: they are Jeffrey pine/bitterbrush/wooly mule's ear, Jeffrey pine/bitterbrush-mountain mahogany/western needlegrass, Jeffrey pine/mountain mahogany, and Jeffrey pine/mountain big sagebrush/Idaho fescue. The Mountain Peaks ACEC/RNA would serve as a good research site for genetic and fire effects/history studies of high elevation Great Basin forests and woodlands. The sagebrush steppe communities surrounding both these sections are approaching a late seral condition having mature mountain big sagebrush that has nearly closed canopies; the area needs to be treated to protect the unique communities from a wildfire.

Relevance

The proposed ACEC/RNA is unique in terms of scenic quality, geographic location, and botanical composition. Tule Mtn and McDonald Peak are the highest points in the Field Office and can be seen by travelers driving on Highway 395. Tule Mtn, with its conifer, mountain shrub, mountain mahogany, and sagebrush associations on the upper slopes is in striking contrast to the juniper woodlands on its lower slopes. The white fir and Jeffrey pine associations are isolated from similar associations on the Modoc National Forest. McDonald Peak located in the true Great Basin, is a prominent feature in the southern part of the Field Office and of the Madeline Plains and provides a contrast in vegetation types with the presence of white fir, aspen, curlleaf mountain mahogany, and high elevation perennial grass and forb associations. The Mtn Peaks ACEC/RNA would provide research opportunities for studying high elevation Great Basin plant associations, genetic studies of isolated conifer associations, and fire history.

Importance

The proposed ACEC/RNA is unspoiled except for a few four wheel drive roads. Habitat quality for raptors and mule deer is high, with McDonald Peak being an important mule deer fawning ground. Both peaks lack complete botanical inventory, so designation as an ACEC/RNA would create the need accomplish this. These peaks are at risk of losing floristic diversity and wildlife habitat from wildfires; establishment of an ACEC/RNA would result in complementary proposed management actions to reduce fuel loading on the lower slopes. Both peaks are identified for vista management with Tule Mts. Managed as VRM Class I due to WSA status, and McDonald Mt. proposed to be managed as VRM Class II. In the Recreation Opportunity Spectrum, McDonald Peak is proposed to be managed as primitive to maintain its road less character.

Appendix F

Noxious Weed Prevention Schedule for the Alturas Field Office

ALTURAS FIELD OFFICE WEED PREVENTION SCHEDULE

9 February 1999

PREVENTION ACTIVITY	WHEN	WHO IS RESPONSIBLE
GENERAL		
Check body and under carriage of off road vehicles and ATV's for plant material and clean with best available method before leaving weed infested area.	All year	All field going employees
Check body and under carriage of vehicles and ATV's for plant material and clean with best available method, preferably high-pressure washing, before leaving for field.	All year	All employees
Include in all NEPA documents, noxious Weeds in the list of Critical Elements of the Human Environment.	All year	All employees working with NEPA documents
All field personnel will have an active role in detection/inventory of noxious weed; reporting species and location to the field office weed coordinator,	All year	All field going employees
Weed identification and reporting procedures training for all field office employees.	Once a year	Weed Coordinator
LANDS AND REALTY		
Include noxious weed prevention and control in all Right of Ways, leases or permits, and acquisition/disposal. Benefiting party will be financially responsible for controlling weeds.	As required	Realty Specialist Weed Coordinator
Coordinate with AFO Weed Coordinator on all acquisitions.	As appropriate	Realty Specialist
Assure permits that involve soil disturbing activities have provisions for sanitizing equipment prior to entering BLM lands.	As appropriate	Realty Specialist Weed Coordinator
RECREATION/WILDERNESS		
Consider off road vehicle closures in areas of known weed infestations.	As appropriate	Recreation Planner Ranger Weed Coordinator
Ensure that areas under recreation permits have on site weed control and minimize spread to other areas.	As required	Recreation Planner Weed Coordinator
Require use of weed free hay in Wilderness Study Areas; sign trail heads and include in hunting/guiding permits weed free ethics.	As required	Recreation Planner Weed Coordinator

PREVENTION ACTIVITY	WHEN	WHO IS RESPONSIBLE
Monitor areas under concentrated recreation activity.	As necessary	Recreation Planner Weed Coordinator
Provide standard weed prevention information to Special Recreation Permit applications to encourage a weed free ethic. This information would be provided by the employee administering the permit.	As appropriate	
MINERALS/RECLAMATION		
Require weed prevention and treatment procedures in all mining plans and activities.	As appropriate	Geologist Weed Coordinator
For all mineral activity, retain bonds for weed control until the site is returned to desired vegetative conditions.	As required	Geologist Weed coordinator
Require all mining sites to be revegetated after completion of mining activities.	As soon as possible after mining activity has stopped.	Geologist Weed Coordinator
Require use of certified weed free seed and mulch for all reclamation activities.	As required	Geologist Weed Coordinator
If topsoil is brought in from another location, require site identification/certification of borrow area for absence of noxious weeds.	As required	Geologist Weed Coordinator
Inspect gravel pits and fill sources to identify weed-free sources; all gravel and fill must come from these sources.	As appropriate	Geologist Force Account Supervisor Weed Coordinator
ROADS		
Train County and BLM Force Account road maintenance crews in noxious weed ID and spread prevention techniques.	Spring - Fall As necessary	Weed Coordinator
Minimize road disturbance in weed infested areas and high-risk areas.	As required	Force Account Supervisor Equipment Operator
Coordinate with County and BLM road crews on road maintenance schedules and proposed activities.	As required	Weed Coordinator
Use fill/gravel from weed free sources. Inspect gravel pits and fill sources for noxious weeds.	As required	Geologist Weed Coordinator
Minimize new road construction through established and high-risk noxious weed areas. Control/ eradicate weeds prior to or after road construction.	As required	Field Office Manager through NEPA process
Clean equipment of mud, debris and plant parts before leaving noxious weed areas or at appropriate location before dispatching to next project. High-pressure wash equipment upon returning to BLM facility.	All year	Force Account Supervisor Equipment Operators Road Crews

PREVENTION ACTIVITY	WHEN	WHO IS RESPONSIBLE
SUPPORT SERVICES		
Incorporate weed prevention into road layout, design and alternative evaluations.	All year	Engineer Force Account Supervisor Weed Coordinator
Include stipulations to stop the spread of noxious weeds in all contractual activities.	As required	Engineer Project lead Weed Coordinator
Coordinate with Force Account to avoid spreading weeds if known infested sites are to be disturbed. High-pressure wash plant parts, debris, etc. from construction equipment utilized by BLM employees.	All year	Force Account Supervisor Equipment operators Weed Coordinator
RANGELAND MANAGEMENT		
Monitor livestock disturbances at salt licks, watering areas and sensitive grazing areas to reduce potential weed invasion.	Field Season	Range Specialist Weed Coordinator
Control timing of turnout/use in infested areas to reduce seed production and transport.	Grazing Season	Field Office Manager through NEPA process
Consider noxious weeds in the allotment evaluation process.	As appropriate	Range Specialist Weed Coordinator
Include stipulations to stop the spread of noxious weeds in all contractual activities.	As required	Engineer Range Specialist Weed Coordinator
Educate permittees in noxious weed ID, documenting locations and control efforts. Encourage users to report noxious weed locations to resource specialists.	Pre-season meetings, field trips. As appropriate	Range Specialist Weed Coordinator
WILDLIFE/FISHERIES		
Incorporate noxious weed prevention in all wildlife habitat improvement projects and Habitat Management Plans	As appropriate	Wildlife Biologist
Emphasize critical wildlife habitat and sensitive areas where noxious weeds have invaded. Initiate control measures to reduce infestation in these areas.	As appropriate	Wildlife Biologist Weed Coordinator
Coordinate transplanting/reintroduction activities with California Department of Fish and Game to eliminate spread of noxious weeds by vehicles and animals. Consider quarantine of reintroduced species.	As appropriate	Wildlife Biologist Field Manager

PREVENTION ACTIVITY	WHEN	WHO IS RESPONSIBLE
Identify listed, T&E, and all BLM Sensitive flora and fauna in or adjacent to noxious weed infestations. Ensure that they are given consideration and protection. Inventory and flag plants before any noxious weed treatment begins.	All year	Wildlife Biologist Botanist Weed Coordinator Field Office Manager through NEPA process
CULTURAL		
Monitor known cultural sites for noxious weed infestations.	Field season	Archaeologist Weed Coordinator
Require reseeding of archaeological site excavations with certified weed-free seed if high potential for noxious weed establishment exists.	As appropriate	Archaeologist Weed Coordinator
FIRE		
Train fire crews in noxious weed awareness, ID and prevention techniques.	Pre-fire season	Weed Coordinator
Ensure that fire suppression and rehabilitation efforts minimize weed spread.	Fire season Post-burn	Fire Management Officer Weed Coordinator Hydrologist Range Specialist
Include noxious weed prevention in Resource Advisor duties. Advise IC and Resource Advisor of known noxious weed sites in or near the fires.	All year Fire season	Weed Coordinator Resource Advisors Fire Management Officer
Conduct prescribed burns on noxious weeds present in areas suppressed by fires. Burn at appropriate season to optimize control efforts and seed reduction.	Spring/summer Fall	Fire Management Officer Weed Coordinator Range Specialist
Evaluate natural revegetation potential on wildland fire incidents. Emphasize reseeding burn areas with native species to reduce weed establishment. Refer to Emergency Fire Rehabilitation (EFR) Handbook, H-1742, for guidelines. Incorporate integrated weed management in all EFR Plans.	Post-burn	Fire Management Officer Botanist Weed Coordinator Range Specialist
Prior to prescribed burns, monitor areas for noxious weed invasion. Document fuel break disturbance in known noxious weed areas. Conduct post-burn monitoring for weed invasion. Incorporate weed control in hazard reduction and prescribed burn projects.	Pre and post prescribed burn	Fire Management Officer Crew Bosses Weed Coordinator
During the transition meeting on wildland fires, command staff will be made aware of AFO noxious weed prevention measures.	Wildland fires	Fire Management Officer Weed Coordinator Field Office Manager Incident Commander

PREVENTION ACTIVITY	WHEN	WHO IS RESPONSIBLE
Washing down of vehicles, equipment, etc. See Appendix 1.	Fire season Prescribed burns	Fire Management Officer Incident Commander Fire crews Support personnel
WEED COORDINATOR		
Coordinate and conduct noxious weed awareness and prevention training to BLM office personnel. Present Noxious Weed Education programs to public user groups, schools and civic groups.	Pre-field season Throughout year	Weed Coordinator
Be involved in cooperative weed management efforts with other groups, volunteers, resource agencies and local and state governments. Attend weed management meetings and report on AFO and Sierra Cascade Modoc Plateau Weed Province integrated weed management activities.	All year	Weed Coordinator
Conduct inventory, monitoring and GPS mapping of noxious weeds in Weed Management Areas. Prepare GPS files for export to Arc Info GIS system.	Field Season	Weed Coordinator
Coordinate with California Department of Agriculture, and Lassen, Modoc, Shasta and Siskiyou County Departments of Agriculture on noxious weed treatment. Assist and supervise on treatment activities.	As necessary	Weed Coordinator
Provide map locations of infested areas to all field personnel. Stress limited entry into these areas to reduce weed transport by contamination and clothing.	Field season	Weed Coordinator

Appendix 1

As the battle against undesirable plants and noxious weeds accelerates in Northeastern California, the Alturas Field Office continues to take proactive measures to implement the Integrated Weed Management Program. One action is to prevent the transportation of noxious weeds in from other field offices, districts, states and regions by vehicles. Fire Management and fire suppression vehicles are at special risk of carrying undesirable plant seeds and parts by the nature of their work.

To reduce the risk of introducing undesirable plants as part of the Field Office weed prevention program, the following procedures are recommended to be followed by vehicles entering and leaving the Alturas Field Office:

1. Off-district engines, crew carriers, overhead vehicles and helitac/helicopter support vehicles will, upon check-in, wash down at the West Valley Fire Station.
 - a. The washdown will concentrate on the undercarriage, with special emphasis on axles, frame, crossmembers, motormounts, skid plates and on and underneath steps, runningboards and front bumper/brush guard assemblies. Vehicle cabs will be swept out with refuse disposed of in waste receptacles.

- b. During initial briefings, washdowns will be mentioned and facilities made available for oncoming crews.
 - c. If the Base Camp or ICP is at a location other than West Valley Fire Station, the washdown station will be at a centralized location and upon demobilization, it will be GPS'd and flagged and the location be made known to the AFO Fire Management Officer, Environmental Specialist or the Weed Coordinator.
- 2. Alturas Field Office crews will follow the same procedures when returning from fieldwork or wildland fires, especially when vehicles are used in known noxious weed areas infested with knapweeds, yellow starthistle, tall whitetop, leafy spurge, and thistles.
 - 3. Upon leaving the Field Office when released from an incident, all off-unit vehicles will follow aforementioned washdown procedures so that Alturas' noxious weed problems do not become someone else's problems.
 - 4. All ancillary equipment incidental to use in fire suppression will be cleaned of weed seed, stems, parts, stalks, etc. prior to release from an incident.

This Field Office policy (NORCAL East), will be followed for all equipment involved in fire suppression while on Alturas Field Office assignments. Vehicles will be cleared of washdown procedures during checkout and crew evaluations. In the event vehicles are released from fires away from the Field Office, the closest wash facility (government or commercial), will be utilized.

List of Species Known to Occur in the Alturas Field Office Area

Appendix G

List of Species Known to Occur in the Alturas Field Office Area

List of Species Known to Occur in the Alturas Field Office Area

Common name	Scientific name
BIRDS	
American Avocet	<i>Recurvirostra americana</i>
American Bittern	<i>Botaurus lentiginosus</i>
American Coot	<i>Fulica Americana</i>
American Crow	<i>Corvus brachyrhynchos</i>
American Goldfinch	<i>Carduelis tristis</i>
American Kestrel	<i>Falco sparverius</i>
American Robin	<i>Turdus migratorius</i>
American Wigeon	<i>Anas Americana</i>
Ash-throated Flycatcher	<i>Myiarchus cinerascens</i>
Audubon's warbler (AKA Yellow-rumped)	<i>Dendroica coronata</i>
Bald Eagle	<i>Haliaeetus leucocephalus</i>
Bank Swallow	<i>Riparia riparia</i>
Barn Swallow	<i>Hirundo rustica</i>
Belted kingfisher	<i>Ceryle alcyon</i>
Bewick's Wren	<i>Thryomanes bewickii</i>
Black Phoebe	<i>Sayornis nigricans</i>
Black Swift	<i>Cypseloides niger</i>
Black-billed Magpie	<i>Pica hudsonia</i>
Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>
Black-throated Sparrow	<i>Amphispiza bilineata</i>
Blue-gray Gnatcatcher	<i>Polioptila caerulea</i>
Blue-winged teal	<i>Anas discors</i>
Bobolink	<i>Dolichonyx oryzivorus</i>
Brewer's Blackbird	<i>Euphagus cyanocephalus</i>
Brewer's Sparrow	<i>Spizella breweri</i>
Brown-headed Cowbird	<i>Molothrus ater</i>
Bullock's Oriole	<i>Icterus bullockii</i>
Burrowing Owl	<i>Athene cunicularia</i>
Bushtit	<i>Psaltiriparus minimus</i>
California Gull	<i>Larus californicus</i>
California Quail	<i>Callipepla californica</i>
Calliope Hummingbird	<i>Stellula calliope</i>
Canada Goose	<i>Branta canadensis</i>
Canyon Wren	<i>Catherpes mexicanus</i>
Caspian Tern	<i>Sterna caspia</i>
Cassin's Finch	<i>Carpodacus cassinii</i>
Cedar Waxwing	<i>Bombycilla cedrorum</i>
Chipping Sparrow	<i>Spizella passerine</i>
Chukar	<i>Alectoris chukar</i>
Cinnamon Teal	<i>Anas cyanoptera</i>
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>
Common Nighthawk	<i>Chordeiles minor</i>
Common Pochard*	<i>Aythya ferina</i>
Common Poorwill	<i>Phalaenoptilus nuttallii</i>
Common Raven	<i>Corvus corax</i>
Common Snipe	<i>Gallinago gallinago</i>
Common Yellowthroat	<i>Geothlypis trichas</i>
Cooper's Hawk	<i>Accipiter cooperii</i>
Cordilleran Flycatcher	<i>Empidonax occidentalis</i>
Downy Woodpecker	<i>Picoides pubescens</i>
Dusky Flycatcher	<i>Empidonax oberholseri</i>
Eared Grebe	<i>Podiceps nigricollis</i>
European Starling	<i>Sturnus vulgaris</i>
Evening Grosbeak	<i>Coccothraustes vespertinus</i>
Ferruginous Hawk	<i>Buteo regalis</i>
Forster's Tern	<i>Sterna forsteri</i>
Fox Sparrow	<i>Passerella iliaca</i>
Gadwall	<i>Anas strepera</i>
Golden Eagle	<i>Aquila chrysaetos</i>
Grasshopper Sparrow	<i>Ammodramus savannarum</i>

Common name	Scientific name
Gray Flycatcher	<i>Empidonax wrightii</i>
Great Horned Owl	<i>Bubo virginianus</i>
Greater Sage-Grouse	<i>Centrocercus urophasianus</i>
Greater Sandhill Crane	<i>Grus canadensis tabida</i>
Green-tailed Towhee	<i>Pipilo chlorurus</i>
BIRDS (continued)	
Green-winged Teal	<i>Anas crecca</i>
Hairy Woodpecker	<i>Picoides villosus</i>
Horned Lark	<i>Eremophila alpestris</i>
House Finch	<i>Carpodacus mexicanus</i>
House Sparrow	<i>Passer domesticus</i>
House Wren	<i>Troglodytes aedon</i>
Juniper Titmouse	<i>Baeolophus ridgwayi</i>
Killdeer	<i>Charadrius vociferus</i>
Lark Sparrow	<i>Chondestes grammacus</i>
Lazuli Bunting	<i>Passerina amoena</i>
Lesser Goldfinch	<i>Carduelis psaltria</i>
Lesser Scaup	<i>Aythya affinis</i>
Lincoln Sparrow	<i>Melospiza lincolni</i>
Loggerhead Shrike	<i>Lanius ludovicianus</i>
Long-billed Curlew	<i>Numenius americanus</i>
MacGillivray's Warbler	<i>Oporornis tolmiei</i>
Mallard	<i>Anas platyrhynchos</i>
Marsh Wren	<i>Cistothorus palustris</i>
Mountain Bluebird	<i>Sialia mexicana</i>
Mountain Chickadee	<i>Poecile gambeli</i>
Mourning Dove	<i>Zenaida macroura</i>
Nashville Warbler	<i>Vermivora ruficapilla</i>
Northern Harrier	<i>Circus cyaneus</i>
Northern Pintail	<i>Anas acuta</i>
Northern Pygmy-Owl	<i>Glaucidium gnoma</i>
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>
Northern Saw-whet Owl	<i>Aegolius acadicus</i>
Northern Shoveler	<i>Anas clypeata</i>
Olive-sided Flycatcher	<i>Contopus cooperi</i>
Orange-crowned Warbler	<i>Vermivora celata</i>
Oregon Junco (AKA Dark-eyed)	<i>Junco hyemalis</i>
Pied-billed Grebe	<i>Podilymbus podiceps</i>
Pine Siskin	<i>Carduelis pinus</i>
Prairie Falcon	<i>Falco mexicanus</i>
Redhead	<i>Aythya Americana</i>
Red-breasted Nuthatch	<i>Sitta Canadensis</i>
Red-naped Sapsucker	<i>Sphyrapicus nuchalis</i>
Red-shafted Flicker (AKA Northern flicker)	<i>Colaptes auratus</i>
Red-tailed Hawk	<i>Buteo jamaicensis</i>
Red-winged Blackbird	<i>Agelaius phoeniceus</i>
Ring-billed Gull	<i>Larus delawarensis</i>
Ring-necked Duck	<i>Aythya collaris</i>
Ring-necked Pheasant	<i>Phasianus colchicus</i>
Rock Pigeon (AKA Rock dove or feral pigeon)	<i>Columba livia</i>
Rock Wren	<i>Salpinctes obsoletus</i>
Ruddy Duck	<i>Oxyura jamaicensis</i>
Sage Sparrow	<i>Amphispiza belli</i>
Sage Thrasher	<i>Oreoscoptes montanus</i>
Savannah Sparrow	<i>Passerculus sandwichensis</i>
Say's Phoebe	<i>Sayornis saya</i>
Sharp-shinned hawk	<i>Accipiter striatus</i>
Song Sparrow	<i>Melospiza melodia</i>
Sora	<i>Porzana Carolina</i>
Spotted Sandpiper	<i>Actitis macularia</i>
Spotted Towhee	<i>Pipilo maculatus</i>
Steller's Jay	<i>Cyanocitta stelleri</i>
Swainson's Hawk	<i>Buteo swainsoni</i>
Tree Swallow	<i>Tachycineta bicolor</i>

Common name	Scientific name
Turkey Vulture	<i>Cathartes aura</i>
Vesper Sparrow	<i>Poocetes gramineus</i>
Violet-green Swallow	<i>Tachycineta thalassina</i>
Virginia Rail	<i>Rallus limicola</i>
Warbling Vireo	<i>Vireo gilvus</i>
Western Bluebird	<i>Sialia mexicana</i>
Western Grebe	<i>Aechmophorus occidentalis</i>
Western Kingbird	<i>Tyrannus verticalis</i>
Western Meadowlark	<i>Sturnella neglecta</i>
BIRDS (continued)	
Western Scrub-Jay	<i>Aphelocoma californica</i>
Western Tanager	<i>Piranga ludoviciana</i>
Western Wood-Pewee	<i>Contopus sordidulus</i>
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>
White-faced Ibis	<i>Plegadis chihi</i>
Willet	<i>Catoptrophorus semipalmatus</i>
Williamson's Sapsucker	<i>Sphyrapicus thyroideus</i>
Wilson's Phalarope	<i>Phalaropus tricolor</i>
Wilson's Snipe (AKA Common snipe)	<i>Gallinago galinago</i>
Wilson's Warbler	<i>Wilsonia pusilla</i>
Yellow Warbler	<i>Dendroica petechia</i>
Yellow-breasted Chat	<i>Icteria virens</i>
Yellow-headed Blackbird	<i>Xanthocephalus xanthocephalus</i>
MAMMALS	
Least chipmunk	<i>Eutamias minimus</i>
Great Basin pocket mouse	<i>Perognathus parvus</i>
Deer mouse	<i>Peromyscus maniculatus</i>
Cottontail or brush rabbit	<i>Sylvilagus sp.</i>
Golden-mantled ground squirrel	<i>Callospermophilus lateralis</i>
Belding's ground squirrel	<i>Citellus beldingi</i>
Sagebrush vole	<i>Lagurus curtatus</i>
Northern pocket gopher	<i>Thomomys talpoides</i>
Pygmy rabbit	<i>Sylvilagus idahoensis</i>
Kangaroo mouse	<i>Microdipodops sp.</i>
Ord'd kangaroo rat	<i>Dipodomys ordii</i>
Townsend's ground squirrel	<i>Citellus townsendii</i>
Yellow pine chipmunk	<i>Eutamias amoenus</i>
Common porcupine	<i>Erethizon dorsatum</i>
Bushy-tailed wood rat	<i>Neotoma cinerea</i>
Northern flying squirrel	<i>Glaucomys sabrinus</i>
Chisel-toothed or Great Basin kangaroo rat	<i>Dipodomys microps</i>
Heerman kangaroo rat	<i>Dipodomys heermanni</i>
Northern grasshopper mouse	<i>Onychomys leucogaster</i>
Dark kangaroo mouse	<i>Microdipodops megacephalus</i>
Black-tailed jackrabbit or hare	<i>Lepus californicus</i>
Canyon mouse	<i>Peromyscus crinitus</i>
Long-tailed weasel	<i>Mustela frenata</i>
Western harvest mouse	<i>Reithrodontomys megalotis</i>
Piñon or Pinyon mouse	<i>Peromyscus truei</i>
White-tailed or Antelope ground squirrel	<i>Ammospermophilus leucurus</i>
Shrew (very likely Preble's)	<i>Sorex sp.</i>
Dusky-footed wood rat	<i>Neotoma fuscipes</i>
Long-tailed meadow mouse or vole	<i>Microtus longicaudus</i>
Long-tailed pocket mouse	<i>Perognathus formosus</i>
Wild horse	<i>Equus caballus</i>
Mule deer	<i>Odocoileus hemionus</i>
Pronghorn antelope	<i>Antilocapra americana</i>
Rocky mountain elk	<i>Cervus elaphus nelsoni</i>
California bighorn sheep	<i>Ovis canadensis californiana</i>
Coyote	<i>Canis latrans</i>
Bobcat	<i>Lynx rufus</i>
Cougar	<i>Felis concolor</i>
Yellow-bellied marmot	<i>Marmota flaviventris</i>

APPENDICES

Common name	Scientific name
Badger	<i>Taxidea taxus</i>
Beaver	<i>Castor canadensis</i>
Raccoon	<i>Procyon lotor</i>
Striped skunk	<i>Mephitis mephitis</i>
Muskrat	<i>Ondatra zibethicus</i>
Long-eared myotis	<i>Myotis evotis</i>
Small-footed myotis (AKA Western s.f. myotis)	<i>Myotis ciliolabrum</i>
Little brown bat	<i>Myotis lucifugus</i>
Long-legged myotis	<i>Myotis volans</i>
Pallid bat	<i>Antrozous pallidus</i>
Yuma myotis	<i>Myotis yumanensis</i>
Townsend's western big-eared bat	<i>Plecotus townsendii</i>
Western pipistrelle bat	<i>Pipistrellus hesperus</i>
MAMMALS (continued)	
Big brown bat	<i>Eptesicus fuscus</i>
Spotted bat	<i>Euderma maculatum</i>
Silver-haired bat	<i>Lasionycteris noctivagans</i>
Hoary bat	<i>Lasiurus cinereus</i>
Mexican free-tailed bat	<i>Tadarida brasiliensis</i>
AMPHIBIANS AND REPTILES	
Northern sagebrush lizard	<i>Sceloporus graciosus graciosus</i>
Great Basin rattlesnake	<i>Crotalus viridis lutosus</i>
Pacific treefrog	<i>Hyla regilla</i>
Desert horned lizard	<i>Phrynosoma platyrhinos</i>
Bullfrog	<i>Rana catesbeiana</i>
Western fence lizard	<i>Sceloporus occidentalis</i>
Western toad	<i>Bufo boreas</i>
Long-nosed leopard lizard	<i>Gambelia wislizenii</i>
Western terrestrial garter snake	<i>Thamnophis elegans</i>
Northern leopard frog	<i>Rana pipiens</i>
Side-blotched lizard	<i>Uta stansburiana</i>
Short-horned lizard	<i>Phrynosoma hernandesi</i>
Northern alligator lizard (unverified)	<i>Gerrhonotus coeruleus</i>
Gopher snake	<i>Pituophis catenifer</i>
Common kingsnake (unverified)	<i>Lampropeltis getulus</i>
EUBRANCHIOPODS	
Tadpole shrimp	<i>Lepidurus</i> sp. [Likely (<i>L. lemmoni</i>)]
GASTROPODS	
<i>Pyrgulopsis gibba</i>	<i>Pyrgulopsis gibba</i>
FISH	
Warner sucker	<i>Catostomus warnerensis</i>
Warner valley redband trout	<i>Oncorhynchus mykiss</i> spp.
Eagle lake rainbow trout	<i>Salmo gairdnerii aquilarum</i>
Brown trout	<i>Salmo trutta</i>
Cuttbow	<i>Oncorhynchus clarkii x mykiss</i>
Redside shiner	<i>Richardsonius balteatus</i>
Speckled dace	<i>Rhinichthys osculus</i>
Wall Canyon sucker	<i>Catostomus</i> sp.
Cowhead Lake tui chub	<i>Gila bicolor vaccaceps</i>
Sheldon tui chub	<i>Gila bicolor eury soma</i>
Smallmouth bass	<i>Micropterus dolomieu</i>

Note: This is a list of species known to use lands within the boundaries of the Alturas Field Office.

Sources: Scientific names of birds are from Sibley (2000) except where noted by "*" or "AKA" which is via Sibley and/or Scott et al. (1987). Mammals follow Ingles (1965), amphibians and reptiles follow Stebbins (1985) and eubranchiopods and gastropods follow Pennak (1989). Fish references are after various current sources including; Page and Burr (1991), U. S. Fish and Wildlife Service (1998), and U. S. Geological Survey (2002, 2003).

Appendix H

Management of Lands with Wilderness Characteristics

APPENDIX H

MANAGEMENT OF LANDS WITH WILDERNESS
CHARACTERISTICSMANAGEMENT DIRECTION

Management of Lands with Wilderness Characteristics is part of BLM's multiple-use mandate, and is recognized within the spectrum of resource values and uses.

Public lands with wilderness characteristics generally:

- Have been affected primarily by the forces of nature, with the imprint of humans substantially unnoticeable,
- Have outstanding opportunities for solitude or a primitive and unconfined type of recreation,
- Have at least five thousand acres of land or of sufficient size as to make practicable its preservation and use in unimpaired condition, and
- Potentially containing ecological, geological, or other features of scientific, educational, scenic, or historical value.

With exceptions, public lands having wilderness characteristics should be managed to protect these values. In addition, they should augment multiple-use management of the Alturas Field Office and adjacent lands particularly for the protection of watersheds and water yield, wildlife habitat, natural plant communities, and similar natural values.

With exceptions, the following activities generally do not occur within lands having wilderness characteristics:

- Commercial enterprises
- Permanent roads
- Temporary roads
- Use of motor vehicles
- Use of motorized equipment
- Use of motorboats
- Landing of aircraft
- Mechanical transport
- Structures Installations

However, there are exceptions to these prohibitions and they are generally grouped into three categories.

- **Valid Existing Rights.** Prior-existing rights may continue. New discretionary uses that create valid existing rights are not allowed.
- **Administrative Activities.** New commercial activities or new permanent roads will not be authorized. BLM may authorize any of the other prohibitions if it is necessary to meet the minimum requirements to administer and protect the lands with wilderness character (called the "minimum requirement exception") and to protect the health and safety of persons within the area.

- Other General Allowances. Subject to limitations determined by the State Director, general allowances could include actions necessary to control fire, insects, and diseases, recurring Federal mineral surveys, established livestock grazing, commercial services to the extent necessary for activities which are proper for realizing the recreational or other wilderness character purposes and compatible with the defined values, and adequate access to in-holdings.

SPECIFIC GUIDANCE

1. *Emergencies.* The use of motor vehicles and mechanical transport, and the construction of temporary roads, structures, and installations is allowed for emergency purposes and when consistent with the management principles of the Alturas Field Office and the “minimum requirement exceptions.”

2. *Land Disposals, Rights-of-Ways, Use Authorizations.* These lands will be retained in public ownership. They will not be disposed through any means, including public sales, exchanges, patents under the Recreation and Public Purposes Act, color of title Class II, desert land entries (except where a vested right was established prior to October 21, 1976) or State selections. Disposals may be permitted under normal BLM procedures for mining patents, color of title Class I, and desert land entries in which a vested right was established. Prior existing rights, such as leases under the Recreation and Public Purposes Act, leases/permits under 43 CFR 2920, and rights-of-ways (ROWs) may continue. These also could be renewed if they are still being used for their authorized purpose. New authorizations, leases, permit, and ROWs will not be authorized since they are considered new valid rights.

3. *Routes of Travel.* The construction of new permanent roads will not be allowed. New temporary roads could be allowed if the BLM determines it is consistent with the “minimum requirement exception,” if it is necessary to protect the health and safety of persons within the area, or if necessary to control fire, insects, and diseases.

Motorized or mechanized use of the existing routes is allowed subject to prescriptions outlined in the route designation process or stipulations identified in an authorization. Unless stipulated in the plan, any motorized or mechanized uses off those routes of travel will not be allowed.

4. *Mining.* Existing and new mining operations will be regulated using the 43 CFR 3809 regulations to prevent unnecessary and undue degradation of the lands.

5. *Mineral Leasing.* Existing mineral leases represent a valid existing right. These rights are dependent upon the specific terms and conditions of each lease. Existing leases will be regulated to prevent unnecessary or undue degradation.

No new surface occupancy leases will be issued. Non-surface occupancy leases may be issued if they will not impact the area’s wilderness character. This applies to public lands, including split-estate.

6. *Grazing.* Existing livestock grazing, and the activities and facilities that support a grazing program are permitted to continue at the same level and degree, subject to any additional prescriptions.

Adjustments in the numbers and kind of livestock permitted to graze would be made as a result of revisions in the land use plan. Consideration is given to range condition, the protection of the range resource from deterioration, and protection of the wilderness character of the area.

The construction of new grazing facilities would be permitted if they are primarily for the purpose of protecting wilderness characteristics and more effective management of resources, rather than to accommodate increased numbers of livestock.

The use of motorized equipment for emergency purposes is allowed.

7. Fire Management. Fire management will be consistent with Bureau policy. Fires must be controlled to prevent the loss of human life or property. They must also be controlled to prevent the spread of fires to areas outside of Lands With Wilderness Character where life, resources, or property may be threatened.

Human caused wildfires will be prevented and/or controlled. It may be appropriate to allow natural fires to burn in conformity with a fire management plan. Prescribed fires are allowed in conformity with a fire management plan so long as it is consistent in improving or maintaining the areas wilderness character.

Light-on-the-land fire management techniques will be applied.

New fire management structures are allowed if it is necessary to meet the minimum requirements to administer and protect the Lands With Wilderness Character and to protect the health and safety of persons within the area.

8. Forest/Vegetation Health. Insects, disease, and invasive species may be controlled if determined that it is necessary to meet the minimum requirements to administer and protect these lands.

Insect and disease outbreaks must not be artificially controlled, except to protect timber or other valuable resources outside the Land With Wilderness Character, or in special instances when the loss to resources within these lands is undesirable.

Vegetative manipulation to control noxious, exotic, or invasive species is allowed when there is no effective alternative and when the control is necessary to maintain the natural ecological balances within the area. Control may include manual, chemical, and biological treatment provided it will not cause adverse impacts to the wilderness character.

Where naturalness has been impacted by past timber harvesting, forest stand treatments such as thinnings would be allowed in limited areas, as long as the primary purpose is to accelerate to return these impacted areas to a natural character.

9. Recreation. Primitive and unconfined recreational uses such as hiking, camping, rock climbing, caving, fishing, hunting, trapping, etc. are allowed on these lands. Recreational uses will not be allowed if they require:

- Motor vehicles or mechanical transport (e.g, mountain bikes) off routes designated as open or limited as designated through the route designation process.
- The use of motorboats.
- Permanent structures or installations (other than tents, tarpaulins, temporary corrals, and similar devices for overnight camping).

New commercial services will not be allowed unless they are necessary for realizing the primitive and unconfined recreational values. An example of an allowed commercial service would be an outfitting and guide service. Existing commercial recreational authorizations may be allowed to continue under its terms and conditions to their expiration date.

Recreational or hobby collecting of mineral specimens when conducted without location of a mining claim may be allowed. This use will be limited to hand collection and detection equipment.

10. Cultural and Paleontological Resources. Cultural and paleontological resources are recognized as unique and valuable. They are also important supplemental values to an area's wilderness character.

Resource inventories, studies, and research involving surface examination may be permitted if it benefits wilderness values. This same standard applies for the salvage of archeological and paleontological sites; rehabilitation, stabilization, reconstruction, and restoration work on historic structures; excavations; and extensive surface collection may also be permitted for a specific project.

Permanent physical protection, such as fences, will be limited to those measures needed to protect resources eligible for the National Register of Historic Places and will be constructed so as to minimize impacts on apparent naturalness.

11. Wildlife Management. Fish and wildlife resources are a special feature that may contribute to an area's wilderness character. Whenever possible, these resources should be managed to maintain that character.

Nothing will be construed as affecting the jurisdiction or responsibilities of the State agencies with respect to fish and wildlife management on these lands. Fishing, hunting and trapping are legitimate activities on these lands. The State establishes regulations and enforcement for these uses.

State wildlife agencies and the BLM are responsible for fostering a mutual understanding and cooperation in the management of fish and wildlife. Management activities on these lands will emphasize the protection of natural processes. Management activities will be guided by the principle of doing the minimum necessary to manage the area to preserve its natural character.

Management of public lands having wilderness character will follow the guidelines provided in the Memorandum of Understanding between the BLM and the International Association of Fish and Wildlife Agencies. It will also follow any additional site-specific wildlife decisions addressed through the land use planning process.

Appendix I

Livestock Grazing Allotments

Appendix I Grazing Allotments and Associated Information in the Alturas Field Office

Allotment Number	Allotment Name	Rangeland Health Category	Management Status Category	Public Acres	Active AUMs	Number of Authorizations	Period Begin Date	Period End Date
00101	SOUTH TABLELANDS	Three	M	15932	2464	2 CATTLE	4/16	6/30
00105	RUSSELL SLOUGH/CAPIK	Four	M	1517	167	1 CATTLE	6/1	6/16
00109	PORTUGUESE FLAT	Two	I	3516	551	2 CATTLE	5/1	6/15
00127	BLACKS CANYON RIM	Three	C	823	102	1 CATTLE	5/16	9/30
00131	NEER	Three	C	882	77	1 CATTLE	5/1	5/20
00132	PERRY	Three	C	200	24	1 CATTLE	5/1	5/31
00133	XL	Three	C	1747	143	1 CATTLE	4/16	6/30
00134	PROCK	Three	C	548	58	1 CATTLE	4/16	6/15
00135	PINE CREEK MESA	Three	M	2390	257	1 CATTLE	4/16	5/31
00137	NORTH TABLELANDS	Three	M	24202	3582	2 CATTLE	4/16	6/30
00138	YANKEE JIM	Three	I	1400	400	2 CATTLE	7/1	8/31
00139	RUSSELL	Three	C	119	8	1 CATTLE	9/1	10/30
00140	THOMAS CK	Three	C	467	69	1 CATTLE	4/16	5/30
00141	STERNES ALLOTMENT	Three	C	120	20	1 CATTLE	5/1	6/30
00143	S-X ALLOTMENT	Two	C	760	56	1 CATTLE	4/1	10/30
00144	BROWN FIELD	Three	C	652	32	1 CATTLE	4/16	8/31
00146	WESTSIDE	One	M	5139	879	1 CATTLE	4/10	6/10
00148	PINE CREEK FIELD	Three	C	320	18	1 CATTLE	4/16	5/30
00150	CORBIE FIELD	Three	C	173	27	1 CATTLE	4/16	8/31
00162	RAMOS	Three	C	52	2	1 HORSE	4/16	9/30
00200	LOOMIS	Two	C	670	84	1 CATTLE	5/1	11/30
00201	BABCOCK	Two	C	605	41	1 CATTLE	4/16	6/15
00202	WEST BEAVER CREEK	One	I	7371	674	2 CATTLE	4/16	6/30
00203	CHASE VALLEY	Three	C	2460	214	1 CATTLE	4/16	5/15
00204	CLARK	Three	C	148	12	1 CATTLE	5/1	7/31

Appendix I Grazing Allotments and Associated Information in the Alturas Field Office

Allotment Number	Allotment Name	Rangeland Health Category	Management Status Category	Public Acres	Active AUMs	Number of Authorizations	Period Begin Date	Period End Date
00205	DIXIE VALLEY	Two	M	16332	1291	1 CATTLE	5/15	10/14
00206	BALD MOUNTAIN	Two	I	9547	677	1 CATTLE	4/16	8/1
00208	BIG VALLEY MTN	Two	C	3541	189	1 CATTLE	4/16	6/15
00209	EICHOLZ	Three	C	306	43	1 CATTLE	4/1	6/30
00210	TURNER CANYON	Three	C	897	110	2 CATTLE	4/1	5/15
00211	HAURY	Three	C	769	64	1 CATTLE	4/16	5/15
00212	HITCHENS	Three	C	2029	175	1 CATTLE	4/16	11/15
00213	HAYES SPRING	Three	C	643	100	1 CATTLE	4/1	4/15
00215	AVERY	Three	C	155	18	1 CATTLE	5/1	5/31
00216	MAJOR	Three	C	477	73	1 CATTLE	4/16	5/30
00217	SOUTH JUNIPER	Three	C	507	73	1 CATTLE	4/16	4/30
00218	SILVA FLAT	One	M	14750	1247	2 CATTLE	5/1	9/30
00219	KNUDSON	Three	C	297	36	1 CATTLE	5/16	9/15
00220	KRAMER	Three	C	998	125	1 CATTLE	5/1	5/30
00221	DIBBLE HILL	Three	C	485	28	1 CATTLE	5/16	6/15
00223	NORTH DIBBLE	Three	C	590	53	1 CATTLE	9/1	10/31
00224	HARPER HILL	Three	C	453	73	1 CATTLE	5/15	8/14
00225	RADIO HILL	Three	C	80	4	1 CATTLE	9/1	10/31
00226	RECLAMATION	Three	C	160	16	1 CATTLE	6/1	6/30
00228	ROUND VALLEY	Three	C	121	43	1 CATTLE	4/16	5/7
00229	INDIAN PEAK	Three	C	694	44	1 CATTLE	4/16	9/30
00231	MAMATH	Three	C	960	61	1 CATTLE	4/1	5/15
00232	NORTH JUNIPER	Three	C	1753	263	1 CATTLE	5/1	7/19
00235	BARROWS	Three	C	810	69	1 CATTLE	4/20	6/30
00236	BUTTE CREEK	Three	C	511	42	1 CATTLE	4/16	5/16
00237	DAISY DEAN SPRING	Three	C	1025	80	1 CATTLE	5/16	9/30
00238	PIPER	Three	C	83	10	1 CATTLE	4/16	9/15
00239	EAST BEAVER CREEK	One	I	3696	935	1 CATTLE	4/16	5/31
00241	ROBERTS RESERVOIR	Three	C	1062	43	1 CATTLE	5/1	8/15
00243	BEND	Three	C	744	50	1 CATTLE	4/16	5/31

Appendix I Grazing Allotments and Associated Information in the Alturas Field Office

Allotment Number	Allotment Name	Rangeland Health Category	Management Status Category	Public Acres	Active AUMs	Number of Authorizations	Period Begin Date	Period End Date
00244	THOMPSON	Two	I	5460	613	1 CATTLE	5/1	5/15
00245	ROUND BARN	Three	C	830	150	1 CATTLE	4/16	5/31
00246	MUCK VALLEY	Two	I	12186	1371	1 CATTLE	4/15	6/30
00247	PLANTATION FIELD	One	I	1400	267	1 CATTLE	4/16	5/31
00248	HENCRAFT FIELD	Three	C	1222	154	1 CATTLE	5/15	9/5
00250	PILOT BUTTE	Three	C	189	21	1 CATTLE	5/1	6/15
00300	NORTH ASH VALLEY	One	I	17465	2522	3 CATTLE	5/1	9/30
00301	WING	Two	C	2161	489	1 CATTLE	5/15	8/1
00302	COLD SPRINGS	One	I	17661	3305	1 CATTLE	5/1	10/15
00303	CRABTREE	One	C	340	15	1 CATTLE	5/1	10/15
00304	CRAMER	Three	C	645	36	1 CATTLE	4/16	8/15
00305	SOUTH MCDONALD	One	I	11607	1518	2 CATTLE	5/1	7/15
00306	DRY COW	One	M	5104	1103	1 CATTLE	5/16	10/20
00307	MARR	One	C	73	4	1 CATTLE	4/16	8/15
00308	ROCKY PRAIRIE	One	M	10182	961	1 CATTLE	5/1-5/31	9/16-10/15
00309	CLARKS VALLEY	Three	C	115	30	1 CATTLE	5/1	9/30
00310	TULE MOUNTAIN	Three	I	49376	5284	2 sheep, 4 cattle	5/1	9/30
00311	NELSON CORRAL	One	M	12849	2256	1 CATTLE	5/16	9/20
00312	WARM SPRINGS	Three	C	949	128	1 CATTLE	4/16	8/15
00313	DEEP CANYON	One	C	2259	225	1 CATTLE	4/16	9/15
00314	HALL FIELD	Three	C	1373	192	1 CATTLE	6/1	9/30
00316	SOUTH ASH VALLEY	One	I	15467	1507	1 CATTLE	5/1	8/1
00318	ANDERSON	One	M	610	90	1 CATTLE	5/1	9/1
00319	FILLMAN-DIABLO	Three	C	1490	150	1 CATTLE	5/1	9/30
00320	MCDONALD MOUNTAIN	One	I	14874	2608	1 CATTLE	6/1	10/30
00321	MITCHELL HILL	Two	M	7522	2063	3 CATTLE	4/16	9/15
00322	LOWER HIGHWAY	Three	C	3000	160	1 CATTLE	8/1	10/30

Appendix I Grazing Allotments and Associated Information in the Alturas Field Office

Allotment Number	Allotment Name	Rangeland Health Category	Management Status Category	Public Acres	Active AUMs	Number of Authorizations	Period Begin Date	Period End Date
00323	SAID VALLEY	Two	M	826	110	1 CATTLE	9/1	9/20
00324	DRY VALLEY	Three	C	1960	280	1 CATTLE	4/16	9/30
00325	SOUTH FORK	Four	M	4220	1175	1 CATTLE	5/1	9/15
00326	SUMMIT FIELD	Three	C	1020	35	1 CATTLE	5/1	9/30
00327	FLOURNEY INDIVIDUAL	Three	C	1183	70	1 CATTLE	4/16	9/15
00328	WILLIAMS ALLOT	One	C	1915	48	1 CATTLE	5/1	7/1
00329	BROCKMAN	Three	C	1195	130	1 CATTLE	11/15	5/15
00330	COFFIN ALLOT	Three	C	1457	70	1 CATTLE	4/16	10/30
01301	WEST COYOTE ALLOT	Four	C	440	29	1 CATTLE	5/1	7/30
01302	WEST SHEEP MT ALLOT	Three	C	1813	227	1 CATTLE	4/15 to 5/15	10/1-12/31
01303	RATTLESNAKE BUTTE	Three	C	452	41	1 CATTLE	5/1	7/31
01304	NORTH RED ROCK LAKE	Four	M	1279	54	1 CATTLE	5/15	8/1
01306	WEST DOME	Three	C	2328	84	1 CATTLE	4/15	6/30
01308	BLOODY POINT	Two	M	956	175	1 CATTLE	2/5	4/30
01309	BRYANT MOUNTAIN	Three	C	2570	498	1 CATTLE	3/1	2/28
01310	MT DOME	Three	C	1422	120	1 CATTLE	9/1	12/30
01311	WEST PANHANDLE	Three	C	720	48	1 CATTLE	9/1	12/30
01312	MODOC GULCH	Four	M	2198	361	1 SHEEP	4/15 to 6/15	10/1 to 10/15
01313	NORTH SHEEPY	Three	C	120	5	1 CATTLE	4/15	7/1
01314	BIG TABLELANDS	Two	M	7214	595	1 CATTLE	4/8	5/1
01315	LOWER LAKE	Three	C	418	30	1 CATTLE	5/1	7/15
01316	MAHOGANY MOUNTAIN	Two	M	4699	373	1 CATTLE	4/15	6/30
01317	LAVA FLOW	Three	C	965	139	1 CATTLE	4/15	6/30
01318	COYOTE RIDGE	Four	M	1742	115	1 CATTLE	4/15	7/15
01319	WINDMILL	Four	M	1340	85	1 CATTLE	4/15	7/15

Appendix I Grazing Allotments and Associated Information in the Alturas Field Office

Allotment Number	Allotment Name	Rangeland Health Category	Management Status Category	Public Acres	Active AUMs	Number of Authorizations	Period Begin Date	Period End Date
01320	BARNTOP	Three	C	760	134	1 CATTLE	4/15	6/30
01322	SOUTH RED ROCK LAKE	Four	M	1160	73	1 CATTLE	4/15	6/30
01323	WEST MAHOGANY	Three	C	3400	224	1 CATTLE	5/1	9/15
01324	RED ROCK VALLEY	Three	C	1466	263	1 CATTLE	4/15	6/30
01325	CASUSE MOUNTAIN	Three	C	195	30	1 CATTLE	4/15	5/15
01326	LOVENESS	Three	C	685	152	1 CATTLE	4/15	7/15
01327	NORTH BLOODY POINT	Two	C	80	5	1 CATTLE	11/1	11/15
01328	HOT CREEK	Three	C	240	16	1 CATTLE	5/15	9/15
01401	PETERSON	Three	C	400	46	1 CATTLE	4/15	6/30
01402	MOON SPRINGS	Two	M	6865	651	1 CATTLE	4/15	7/14
01403	CAYTON	Three	C	400	23	1 CATTLE	3/1	2/28
01404	POPCORN CAVE	Three	C	9806	315	1 CATTLE	4/1	5/31
01409	STARVATION GULCH	Three	C	600	50	1 CATTLE	5/1	6/30
01410	SADDLE MOUNTAIN	Three	C	1637	60	1 CATTLE	4/1	5/30
01411	HOGBACK	Two	I	4867	432	1 CATTLE	4/1	6/10
01412	DAY	Three	C	360	17	1 CATTLE	5/1	5/31
01413	ARCHGATE	Two	M	4164	210	1 CATTLE	4/15	8/20
01414	HOT SPRINGS	Three	C	1126	125	1 CATTLE	4/15	7/14
01415	FOUR CORNERS	Three	C	660	56	1 CATTLE	6/1	9/15
10100	BACON	Three	C	331	42	1 CATTLE	4/1	10/31
10102	MENG	Three	C	28	4	1 CATTLE	5/16	6/15
10103	POLSON	Three	C	57	8	1 CATTLE	5/16	6/15
10104	CLOUD	Three	C	80	9	1 CATTLE	6/16	9/15
10106	STRIP	Two	M	7398	245	1 CATTLE	5/1	9/30
10107	ROBERTS CREEK	Three	C	200	12	1 CATTLE	5/1	10/30
10108	RYEGRASS SWALE	Four	M	4244	608	1 CATTLE	4/16	5/30

Appendix I Grazing Allotments and Associated Information in the Alturas Field Office

Allotment Number	Allotment Name	Rangeland Health Category	Management Status Category	Public Acres	Active AUMs	Number of Authorizations	Period Begin Date	Period End Date
10110	BRUNNEMER	Three	C	40	5	1 CATTLE	4/1	8/31
10111	FISHER	Three	C	511	28	1 CATTLE	4/1	10/31
10112	SOUTH GRAVES	Two	I	12950	1570	1 CATTLE	5/1	8/31
10114	WEST FIELD	Two	C	810	27	1 CATTLE	4/16	6/30
10115	EAST FIELD	Two	M	4520	397	1 CATTLE	6/1	6/23
10116	GARDNER #1	Three	C	195	23	1 CATTLE	6/1	8/15
10117	CROWDER	Two	M	2088	161	1 CATTLE	5/1	7/31
10118	NORTH GRAVES/MACKEY	Two	I	3901	421	1 CATTLE	4/16	5/31
10119	LAKESHORE	Three	C	516	10	1 CATTLE	4/16	5/1
10120	HAGGE	Three	C	400	33	1 CATTLE	4/1	6/30
10121	HUGHES	Three	C	304	24	1 CATTLE	4/1	5/15
10122	KELLEY	Three	C	80	7	1 CATTLE	4/1	7/15
10123	RIMROCK	Four	M	2446	250	1 CATTLE	4/10	5/10
		Totals		457519	54881			

Total Acres of Rangeland Health and Management Status by Category

Rangeland Health Category		Acres
1		143,407
2		117,033
3		176,493
4		20,586
Total		457,519
Management Status Category		Acres
C		90,887
I		192,744
M		173,888
Total		457,519

Appendix J

Wild and Scenic River Eligibility and Suitability

WILD AND SCENIC RIVER ELIGIBILITY AND SUITABILITY

Wild and Scenic River System

The Wild and Scenic Rivers Act of 1968 (Public Law 90-542) was passed by Congress to preserve river systems that contain outstanding features. The law was enacted during an era when many rivers were being dammed or diverted, and is intended to balance this development by ensuring that certain rivers and streams remain in their free-flowing condition. The BLM is mandated to evaluate stream segments on public lands as potential additions to the National Wild and Scenic Rivers System (NWSRS) during the Resource Management Plan (RMP) Process under Section 5(d) of the Act. The NWSRS study guidelines are found in BLM Manual 8351, U.S. Departments of Agriculture and Interior Guidelines published in Federal Register Vol. 7, No.173, September 7, 1982 and in various BLM memoranda and policy statements. Formal designation as a Wild and Scenic River requires Congressional Legislation, or designation can be approved by the Secretary of Interior if nominated by the Governor of the state containing the river segment. The following discussion provides information on how BLM considered waterways for potential inclusion in the NWSRS.

The NWSRS study process has three distinct steps:

- Determine what rivers or river segments are eligible for NWSRS designation;
- Determine the potential classification of eligible river segments as wild, scenic, recreational or any combination thereof; and
- Conduct a suitability study to determine if the river segments are suitable for designation as components of the NWSRS.

This report documents all three steps of the process for the streams in the planning area.

Eligibility of Streams in the Alturas Field Office

Identification

A variety of sources were reviewed to identify waterways which could have potential for wild and scenic river designation. They include the Nationwide Rivers Inventory List, the Outstanding Rivers List compiled by American Rivers, Inc., river segments identified in the riparian inventory (2002), and river segments identified by the planning team as having potential to meet Wild and Scenic River eligibility requirements.

The Wild and Scenic Rivers Act defines a river as a “flowing body of water or estuary or a section, portion, or tributary thereof, including rivers, streams, creeks, runs, kills, rills, and small lakes.”

Eligibility Determination

Each identified river segment was evaluated to determine whether it is eligible for inclusion in the NWSRS. To be eligible, a river segment must be “free flowing” and must possess at least one “outstandingly remarkable value” (ORV). These ORVs include the following values:

- Scenic
- Recreational
- Geological
- Fish

- Wildlife
- Historical
- Cultural
- Ecological
- Riparian
- Botanical
- Hydrological
- Scientific

To be considered as “outstandingly remarkable,” a river related value must be a unique, rare, or exemplary feature that is significant at a comparative regional or national scale. Only one such value is needed for eligibility. All values should be directly river related, meaning they should:

- Be located in the river or on its immediate shorelands (generally within ¼ mile on either side of the river);
- Contribute substantially to the functioning of the river ecosystem; and/or
- Owe their location or existence to the presence of the river.

These are the only factors considered in determining the eligibility of a river segment. All other relevant factors are considered in determining suitability. A river need not be navigable by watercraft to be eligible. For purposes of eligibility determination, the volume of flow is sufficient if it is enough to maintain the outstandingly remarkable value(s) identified within the segment.

Table L-1 summarizes the eligibility evaluation of all identified river segments. The table includes information on the length of stream segments studied, indicates if outstandingly remarkable value(s) are present, and identifies the potential classification of each eligible segment.

Classification

The Wild and Scenic Rivers Act and subsequent interagency guidelines provide the following direction for establishing preliminary classifications for eligible rivers:

- **Wild Rivers:** Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.
- **Scenic Rivers:** Those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.
- **Recreational Rivers:** Those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.

Suitability of Streams

Segments displayed in Table L-1 were found to be eligible for inclusion into the NWSRS. Section 4(a) of the Wild and Scenic River Act mandates that all rivers found eligible as potential additions to the NWSRS be studied as to their suitability for such a designation.

The purpose of the suitability study is to provide information upon which the President of the United States can base his recommendation and Congress can make a decision.

The study report describes the characteristics that do or do not make the stream segment a worthy addition to the system, the current status of land ownership and use in the area, the reasonably foreseeable potential uses of the land and water which would be enhanced, foreclosed, or curtailed if the area were included in the system, and several other factors. The suitability study is designed to answer these questions:

- Should the river's free-flowing character, water quality, and outstandingly remarkable values (ORV) be protected, or are one or more other uses important enough to warrant doing otherwise?
- Will the river's free-flowing character, water quality, and ORVs be protected through designation? Is it the best method for protecting the river corridor? (In answering these questions, the benefits and impacts of wild and scenic river designation must be evaluated, and alternative protection methods considered.)
- Is there a demonstrated commitment to protect the river by any nonfederal entities that may be partially responsible for implementing protective management?

Pursuant to Sections 4(a) and 5(c) of the Wild and Scenic Rivers Act, the following factors were considered and evaluated as a basis for the suitability determination for each river.

- Characteristics that do or do not make the area a worthy addition to the NWSRS.
- The current status of land ownership, minerals (surface and subsurface), and use in the area, including the amount of private land involved and associated or incompatible uses.
- The reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the NWSRS. Historical or existing rights which could be adversely affected.
- The federal agency that will administer the area should it be added to the NWSRS.
- The estimated cost to the United States of acquiring necessary lands and interests in lands and of administering the area should it be added to the NWSRS.
- A determination of the degree to which the state or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the NWSRS.
- An evaluation of the adequacy of local zoning and other land use controls in protecting the river's ORVs by preventing incompatible development.
- Federal, public, state, local, or other interests in designation or non-designation of the river, including the extent to which the administrator of the river, including the cost thereof, may be shared by state, local, or other agencies and individuals. Support or opposition to the designation.
- The consistency of designation with other agency plans, programs or policies and in meeting regional objectives.
- The contribution to river system or basin integrity.
- The ability of BLM to manage the river segments under designation, or ability to protect the river area other than Wild and Scenic designation.
- The potential for water resources development.

Appendix K

Energy and Minerals

Surface Use and Occupancy Requirements

APPENDIX K

SURFACE USE AND OCCUPANCY REQUIREMENTS

This appendix describes practices intended to be applied, when needed, to minimize surface disturbances.

The requirements listed below will pertain to all activities conducted in the Alturas Field Office area. They will be applied primarily to the federal surface estate. However, in the case of activities related to the development of oil and gas and other minerals, these standards could be applied to split estate in order to meet the requirements of Onshore Oil and Gas Order No. 1, federal law or regulations or with the concurrence of surface landowners.

The intent of the Surface Use and Occupancy Requirements is to best manage mechanical surface disturbance and other effects on specified natural resources. Mechanical surface disturbance is created by the use of such things as tools and machinery. Activities such as grazing by livestock or wildlife or certain recreational pursuits (e.g., hiking) are not considered to create surface disturbance in the context of these requirements. Circumstances of waivers of the requirements have been included so that they will not be applied needlessly. Exceptions to the requirements will be considered in emergency situations involving human health and safety and the protection of the environment.

The basis for the “200 meter rule” used in the Surface Use and Occupancy Requirements is 43 CFR 3101.1-2, which states that, at a minimum, mitigation measures are deemed consistent with oil and gas lease rights if they do not require “...relocation of proposed operations by more than 200 meters...” The intent of the actions described in this Appendix is to comply with the regulations and allow the relocation of proposed activities to mitigate impacts, but by no more than 200 meters, without undertaking additional NEPA analysis. The opportunity exists through the NEPA process to design mitigations of impacts that would require relocations greater than 200 meters. The “200 meter rule” simply allows relocation of an activity, such as during on-site meetings prior to APD approval, without the need for detailed NEPA analysis.

The Surface Use and Occupancy Requirements identify minimum use standards for activities around certain natural and man-made features to ensure protection of those features. Specific information on those features is maintained for review at the Alturas Field Office.

Table A1 - 1 estimates the acreages affected by the Surface Use and Occupancy Requirements. These estimates reflect the maximum amount of acreage that could be affected and are for purposes of disclosure, comparison and analysis, only. The most likely situation is that the requirements will cumulatively affect only a small area.

- **Wildlife Habitat Projects:** Surface disturbances will not be allowed within up to 200 meters of existing or planned wildlife habitat improvement projects. Large-scale vegetation manipulation projects such as prescribed burns will be excepted. This requirement will be considered for waiver with appropriate off-site mitigation, as determined by Authorized Officer.
- **Raptor Nests:** Raptor nests on special, natural habitat features, such as trees, large brush, cliff faces and escarpments, will be protected by not allowing surface disturbance within up to 200 meters of nests or by delaying activity for up to 90 days, or a combination of both. Exceptions to this requirement for raptor nests will be considered if the nests expected to be disturbed are inactive, the proposed activity is of short duration (e.g. habitat enhancement projects, fences, pipelines), and will not result in continuing activity in proximity of the nest.

- **Slopes or Fragile Soils:** Surface disturbance will not be allowed on slopes over 30 percent. Exceptions will be considered for authorized mineral material extraction sites and designated OHV areas, for the installation of projects designed to enhance or protect renewable natural resources, or if a plan of operations and development which provides for adequate mitigation of impacts was approved by the Authorized Officer. Occupancy or use of fragile soils will be considered on a case-by-case basis.
- **Streams, Rivers and Floodplains:** Surface disturbance will not be allowed within up to 200 meters of the outer edge of 100-year floodplains, to protect the integrity of those floodplains. On a case-by-case basis, an exception to this requirement may be considered based on one or more of the criteria listed below. The first three criteria would not be applied in areas of identified critical or occupied habitat for federally listed threatened or endangered species.
 - Additional development in areas with existing developments that have shown no adverse impacts to the riparian areas as determined by the Authorized Officer, following a case-by-case review at the time of permitting.
 - Suitable off-site mitigation if habitat loss has been identified.

An approved plan of operations ensures the protection of water or soil resources, or both.

 - Installation of habitat, rangeland or recreation projects designed to enhance or protect renewable natural resources.
- **Playas and Alkali Lakes:** Surface disturbance will not be allowed within up to 200 meters of playas or alkali lakes. Waiver of this requirement will be considered on a case-by-case basis for projects designed to enhance or protect renewable natural resources. An exception for oil and gas development will be considered if playa lake loss was mitigated by the protection and development of another playa exhibiting the potential for improvement. Mitigation could include: installing fencing; developing a supplemental water supply; planting trees and shrubs for shelter belts; conducting playa basin excavation; constructing erosion control structures or cross dikes; or by improving the habitat in another area.
- **Springs, Seeps, Lakes and Reservoirs:** Surface disturbance will not be allowed within up to 200 meters of the source of a spring or seep, or within downstream riparian areas created by flows from the source or resulting from riparian area management. Surface disturbance will not be allowed within up to 200 meters of lakes or reservoirs or the adjacent riparian areas. Exceptions to this requirement will be considered for the installation of habitat or rangeland projects, designed to enhance the spring or seep, or downstream flows.
- **Caves:** Surface disturbance will not be allowed within up to 200 meters of known cave entrances, passages or aspects of significant caves. Waiver of this requirement will be considered for projects that enhance cave resources or when an approved plan of operations ensures the protection of cave resources.
- **Sage-grouse:** Lands within ¼ mile of sage-grouse leks will have no surface occupancy (1,507 acres around 12 leks). If new leks develop, the same restrictions will apply to them. Drilling for oil and gas and 3-D geophysical exploration operations will not be allowed in sage-grouse habitat during the period of March 15 through June 15, each year. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 a.m. and 9:00 a.m. The 3:00 a.m. to 9:00 a.m. restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during the period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting.

Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 feet from the source of the noise. Exceptions to these requirements will be considered for areas of no or low sage-grouse strutting activity, or unoccupied habitat, including leks, as determined at the time of permitting, or in emergency situations.

- **Visual Resource Management:** Painting of oil field equipment and structures to minimize visual impacts will be required. Low profile facilities also may be required, when needed, to reduce the contrast of a project with the dominant color, line, texture, and form of the surrounding landscape. Other surface facilities or equipment approved by the BLM, such as large-scale range improvements or pipelines, will be painted, when needed, to conform with the requirements of visual resource management to minimize visual impacts. The selected paint color will match as closely as possible the predominant soil or vegetation color of the area.
- **Recreation Sites:** Surface disturbance will not be allowed within 200 meters of developed recreation areas including campgrounds, interpretive sites, etc. Waiver of this requirement will be considered for projects that enhance ecological quality in the area

Table A1-1
SUMMARY of ESTIMATED ACREAGES AFFECTED by
SURFACE USE and OCCUPANCY REQUIREMENTS
ALTURAS FIELD OFFICE

FOR PURPOSES OF ANALYSIS ONLY

RESOURCE OR FEATURE	ACRES
Wildlife Habitat Projects	5,500
Raptor Nests	20,000
Slopes/Fragile Soils	103,000
Sensitive Plants	57,000
Streams, Rivers, Floodplains	99,000
Playas and Alkalai Lakes	2,400
Springs, Seeps, Lakes and Reservoirs	22,000
Caves	1,700
Sage-Grouse	
timing requirements	125,000
occupancy requirements	1,507
Visual Resource Management	55,000
Recreation Sites	675

Notes:

1. For purposes of analysis, acreages represent the maximum number of acres affected by the requirements. Acreages actually affected when the requirements are applied will be substantially less than those listed.
2. Acreages are not additive, since many different features may occur in the same area.
3. Acreages represent BLM surface only.

Appendix L

Alturas Land Tenure Adjustment Plan

**BUREAU OF LAND MANAGEMENT
ALTURAS FIELD OFFICE, CALIFORNIA**

**Land Tenure Adjustment Plan and Amendment
of the Alturas RMP, Cinder Cone MFP and Mt. Dome MFP**

Names of Plans Amended (the “Alturas Plans”):

Alturas Resource Management Plan and Environmental Impact Statement (Alturas RMP)

Date Approved: August 28, 1984

Cinder Cone Management Framework Plan (Cinder Cone MFP)

Date Approved: July, 1973

Mt. Dome Management Framework Plan (Mt. Dome MFP)

Date Approved: November 24, 1981

Cedar Creek/Tule Mountain Integrated Resource Management Plan (IRMP)

Date Approved: December 1989

Tablelands IRMP

Date Approved: June, 1999

1.0 INTRODUCTION

The Alturas Field Office is located in Northeastern California. The Field Office boundaries encompass public land in four counties as follows:

Lassen	Modoc	Shasta	Siskiyou
265,611 ac	140,975 ac	52,120 ac	38,736 ac

This constitutes a total public land base of 497,442 acres.

The Field Office includes a few large contiguous blocks of public land, such as on the Likely Tablelands, Tule Mountain and in Silva Flat. However, much of the rest of the public land is located in smaller, scattered parcels. A significant portion of the acreage under the jurisdiction of the Field Office is also within the ancestral homelands of the Pit River, Modoc, Shasta and Klamath Indian Tribes.

This Land Tenure Adjustment (LTA) Plan Amendment has two general goals: (1) to implement and expand on the land acquisition decisions of the existing Alturas Plans; and (2) to expand on the disposal and exchange decisions of the Alturas Plans. The management goals and objectives identified in the existing Alturas Plans will continue, except where specifically changed by this Plan Amendment. This Plan Amendment must be read in the context of the established goals and objectives for public land management that have already been set in the existing Alturas Plans. This Plan Amendment is intended as a process step, enabling the Alturas FO to use exchanges and other disposal methods to achieve the goals and objectives of the existing Alturas Plans. This Plan Amendment does not commit the Alturas FO to conduct any specific exchange or other disposal.

This LTA Plan Amendment identifies broad areas of public lands for retention and intensive management in accordance with the goals and objectives of the Alturas Plans. These areas are referred to as **Retention/Acquisition** areas, and they represent portions of, and in some cases all of specific existing Management Areas (MAs) as described in the existing Alturas Plans. Within these retention/acquisition

areas, the BLM will work with willing private landowners to complete land exchanges that will provide public land management benefits as well as management benefits for the private landowners. The retention/acquisition areas where the BLM wishes to acquire private land by exchange are generally larger expanses of public lands with smaller private inholdings. These retention/acquisition areas are those places where the BLM intends to focus on long-term management of the public lands, in accordance with the goals, values and objectives identified in BLM planning. This LTA Plan Amendment also adds an objective of acquiring lands along the Pit River and Hat Creek in Shasta County.

In addition, this LTA Plan Amendment identifies broad areas of public lands where the BLM generally intends to dispose of the existing public lands, either by land exchange or sale. These areas are referred to as **Disposal** areas, and they represent areas where the BLM will not be seeking to acquire any private lands by land exchanges or other methods. Within these disposal areas, there may be some specific parcels of public land that the BLM intends to retain in public ownership for a variety of resource management reasons. These public land parcels will be in a “**custodial**” category, where the BLM will continue to manage them for existing resource values. The public lands to be exchanged or sold into private ownership in the disposal areas are generally smaller, scattered, isolated parcels surrounded by private land, in areas where the BLM does not generally intend to focus on long-term continued management.

1.1 Exchange Objectives

The BLM Alturas Field Office (FO) will use land exchanges to manage the public lands in the Alturas FO in accordance with the policy objectives established by the Congress of the United States in Sections 102(a)(8), 102(a)(12), and 206(a) of the Federal Land Policy and Management Act (FLPMA) of 1976:

Sec 102(a): “The Congress declares that it is the policy of the United States that -
 (1) the public lands be retained in Federal ownership, unless as a result of the land use planning procedure provided for in this Act, it is determined that disposal of a particular parcel will serve the national interest.”

102(a)(8): “...the public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resources and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use;...”

102(a)(12): “the public lands be managed in a manner which recognizes the Nation’s need for domestic sources of minerals, food, timber, and fiber from the public lands ...”

206(a): “A tract of public land or interests therein may be disposed of by exchange by the Secretary [of Interior] under this Act ... where the Secretary ... determines that the public interest will be well served by making that exchange: *Provided*, That when considering public interest the Secretary ... shall give full consideration to better Federal land management and the needs of State and local people, including needs for lands for the economy, community expansion, recreation areas, food, fiber, minerals, and fish and wildlife and the Secretary ... finds that the values and objectives which Federal lands or interests to be conveyed may serve if retained in Federal ownership are not more than the values of the non-Federal lands or interests and the public objectives they could serve if acquired.”

The Alturas Plans contain full descriptions of the resource values and objectives of the Federal lands to be retained in Federal ownership. This LTA Plan Amendment is intended to implement the goals and objectives identified in the Alturas Plans by acquiring private lands with potentially high public resource values which would provide better Federal land management, in exchange for public lands that would meet the needs of State and local people as described in Section 206(a) of FLPMA. Potential exchanges are intended to result in better Federal land management by the BLM, and in better private land management for the landowners who may acquire the public lands through the exchanges.

There are different methods for completing land exchanges. In many cases, BLM will deal directly with the private landowner, with both sides of the exchange paying for their share of the exchange cost, or completing different parts of the exchange process. Given the complex nature of the exchange process (see Appendix A), private landowners may wish to pay various contractors to assist them in completing their share of the exchange process.

In other cases, BLM might use third-party facilitators for land exchanges. In a third-party exchange, the BLM bundles together scattered parcels of public land and offers them to the third-party facilitator in exchange for private lands that the BLM has asked the facilitator to acquire in other areas. Generally, third-party facilitators are only interested in trading for BLM managed land that they know they can sell quickly to adjoining landowners or other interested buyers. Where public land is completely surrounded by private land and has no legal access, the parcel would logically be offered to the surrounding landowner. In cases where there is more than one adjoining landowner, the third party facilitator may negotiate with the different owners or conduct a competitive process so all adjoining owners have an opportunity to acquire the parcel. Individual landowners may act as third-party facilitators to assist in completion of their proposed exchanges.

1.2 Sale Objectives

In some of the disposal areas where the BLM does not generally intend to focus on long-term continued management of smaller parcels, there may not be any interest by the potential purchasers in dealing with third party land exchange facilitators. In those cases, it may be possible to dispose of public lands through public sales under Section 203 of FLPMA (43 USC 1713), in accordance with the policy objectives established by the Congress of the United States in Sections 102(a)(8), 102(a)(12) of FLPMA, as described above. Disposals of public lands by sale under Section 203 of FLPMA have different requirements and conditions than land exchanges under Section 206 of FLPMA. These requirements and conditions are contained in Section 203(a) through (g). Section 203(a) contains the general sale criteria:

“A tract of public lands ... may be sold under this Act, where, as a result of land use planning required under section 202 of this Act, the Secretary [of Interior] determines that the sale of such tract meets the following disposal criteria:

- (1) such tract because of its location or other characteristics is difficult and uneconomic to manage as part of the public lands, and is not suitable for management by another Federal department or agency; or
- (2) such tract was acquired for a specific purpose and the tract is no longer required for that or any other Federal purpose; or
- (3) disposal of such tract will serve important public objectives, including but not limited to, expansion of communities and economic development, which cannot be achieved prudently or feasibly on land other than public land and which outweigh other public objectives and values, including, but not limited to, recreation and scenic values, which would be served by maintaining such tract in Federal ownership.”

Methods of sale and consideration for potential purchasers are specified in Section 203(f):

“Sales of public lands under this section shall be conducted under competitive bidding procedures to be established by the Secretary. However, where the Secretary determines it necessary and proper in order (1) to assure equitable distribution among purchasers of lands, or (2) to recognize equitable considerations or public policies, including but not limited to, a preference to users, he may sell those lands with modified competitive bidding or without competitive bidding. In recognizing public policies, the Secretary shall give consideration to the following potential purchasers:

- (1) the State in which the land is located;
- (2) the local government entities in such State which are in the vicinity of the land;
- (3) adjoining landowners;
- (4) individuals; and
- (5) any other person.”

This LTA Plan Amendment does not identify specific parcels for sale, but identifies land disposal areas and establishes general criteria to be used in later determinations that a specific tract may be suitable for sale under Section 203 of FLPMA. Each potential sale will be examined on a case-by-case basis to evaluate equitable considerations and public policies that may be used to determine whether any consideration for potential purchasers is needed, in accordance with Section 203(f).

2.0 DESCRIPTION OF THE PLAN AMENDMENT

This Amendment of the Alturas Plans expands on the land acquisition decisions of the Alturas Plans, and expands on the disposal/exchange decisions of the Alturas Plans. This LTA Plan Amendment identifies broad areas of public land for retention/acquisition where private lands may be acquired by land exchange, and broad areas of public lands for disposal through exchange and sale. For the reasons given in the introduction to this LTA plan amendment, it has been determined that disposal of public land parcels in accordance with this plan amendment will serve the national interest. The following retention/acquisition and disposal decisions will be implemented by this LTA Plan Amendment, on public lands managed by the Alturas FO.

2.1 Planning Decisions for Retention/Acquisition Areas and Subregions

A. The BLM will acquire, through direct exchange with willing owners, through third-party exchanges for lands owned by willing sellers, or through other suitable acquisition methods from willing owners, private lands within the retention/acquisition management areas or subregions that enhance the management goals, values and objectives identified for the management areas in the Alturas Plans or in specific activity management plans for those areas.

B. Public lands within Areas of Critical Environmental Concern, Wilderness Areas, Wilderness Study Areas, Research Natural Areas, National Cooperative Land and Wildlife Management Areas, National Historic and Scenic Trails and other legally designated special status areas (established by Act of Congress, Executive Order, Secretarial Order, Withdrawals, or other formal agency designation through Federal Register notice) will not be exchanged or otherwise removed from public ownership. The BLM may acquire, by direct or third-party exchange, or by other acquisition methods, private lands (from willing owners) within those designated special areas.

C. Parcels of public lands within the retention/acquisition management areas may be exchanged only for private lands within the same or other Alturas FO retention/acquisition areas, or within other adjacent BLM FO management areas at the discretion of the Alturas Field Manager. The exchange must have been specifically determined by the BLM to well serve the public interest and to provide enhancement of the management goals, values and objectives identified for those areas in the Alturas Plans, other FO planning, or in specific activity management plans for those areas. Such exchanges may occasionally include incidental acquisitions of lands that are within the boundaries of other Federal land managing agencies, but only as a portion of a larger exchange for lands that will be managed by the BLM. Acquired lands within the boundaries of other Federal agencies' management units will be automatically transferred to the other agencies' jurisdiction, by operation of law. Public (BLM) lands within retention/acquisition areas will not be used as an exchange base to acquire lands for other agencies.

D. All newly acquired parcels would be initially managed the same as similar adjacent parcels, unless the site-specific environmental analysis and the record of decision for that exchange identifies different management prescriptions. Any such management prescriptions and/or resource allocations would not require additional land use plan amendments.

E. The Cinder Cone MFP is hereby amended to add a management objective of acquiring lands from willing private owners for the purpose of providing access to the Pit River and Hat Creek and for the enhancement of riparian, fisheries, recreation, cultural resources, watershed and wildlife values in the area.

F. Exceptions to these exchange and acquisition methods may be made, at the discretion of the BLM Authorized Officer, for the public interest. Such exceptions include the following:

1. Based on a showing of public need, the Authorized Officer may approve specific leases and/or sales under the Recreation and Public Purposes Act within the retention/acquisition areas, if no private lands are reasonably available for the proposed public use.

2. At the discretion of the BLM Authorized Officer, public lands may on rare occasions be sold within the retention/acquisition areas under Section 203 of FLPMA, if they meet the criteria of that Section, and if they meet either of the two following described criteria:

- (a) the sale is needed to resolve good-faith unintentional occupancy trespass, involving substantial buildings that cannot be feasibly moved; and the occupancy trespass has resulted from survey errors, or updated surveys that show the buildings were inadvertently located on public land; and the occupancy trespass cannot be resolved under either Section 315 or Section 316 of FLPMA; and such lands are not suitable for disposal by third-party or direct land exchanges; and funding is available, either within the Alturas FO's Lands and Realty budget appropriation, or through contributed funds from potential purchasers, to conduct the necessary environmental studies prior to sale of the specific parcels. Such sales would be limited to the smallest feasible aliquot part or lot that would resolve the trespass, as determined by the BLM Authorized Officer.

- (b) the sale is needed to resolve land management problems that consist of small "slivers" of public land isolated by larger areas of private land,

resulting from prior survey errors or more-recent surveys of previously unsurveyed lands; and such lands do not provide legal access to other areas of public lands, either because they are too small to feasibly accommodate such access or because they do not connect to other public lands; and such lands are not suitable for disposal by direct land exchanges with the surrounding landowner; and funding is available, either within the Alturas FO's Lands and Realty budget appropriation, or through contributed funds from potential purchasers, to conduct the necessary environmental studies prior to sale of the specific parcels. Such sales would be limited to the smallest feasible aliquot part or lot that would resolve the issue, as determined by the BLM Authorized Officer.

2.2 Planning Decisions for Disposal Areas and Subregions

A. Various smaller, scattered parcels of public lands, outside the retention/acquisition areas and within the designated disposal areas, may be disposed of by exchange, either through direct exchange or through third-party exchange agreements, whichever method provides the most public benefits.

B. Custodial Parcels within the Disposal Areas: Certain parcels within the designated disposal areas may be retained in public ownership if they are found to have superior resource values. Such values may include but are not limited to National Register quality prehistoric and historic sites, threatened and endangered species and habitat for such species, special status species habitat, significant wildlife habitat values, wetlands, floodplains, and any other legislatively protected resources. These parcels will be designated as "**Custodial**" parcels. Some custodial parcels have been identified during this planning amendment, and they are listed below. Other custodial parcels would be specifically identified during preparation of environmental analyses for individual disposals in the disposal areas. The BLM does **not** intend to acquire any additional private lands within or adjacent to these custodial parcels, and designation of a parcel as "custodial" does not obligate the BLM to conduct any specific management activities on that parcel.

C. Lands within the designated disposal areas may be sold, at the discretion of the BLM Authorized Officer, if they meet either of the two following criteria:

1. Based on a showing of public need, the Authorized Officer may approve specific leases and/or sales under the Recreation and Public Purposes Act within the disposal areas, if no private lands are reasonably available for the proposed public use.
2. Within the disposal areas, public lands may be sold under Section 203 of FLPMA if they meet the criteria of that section, and if they meet the following additional criteria: such lands are not suitable for disposal by third-party or direct land exchanges, due to a lack of interest in that disposal method by potential purchasers; and funding is available, either within the Alturas FO's Lands and Realty budget appropriation, or through contributed funds from potential purchasers, to conduct the necessary environmental studies prior to sale of the specific parcels.

D. On an exception basis, specific parcels of public lands within the disposal areas may be identified by the BLM Authorized Officer for exchanges to acquire lands that would be under the jurisdiction of other Federal agencies, if the specific exchange is documented to meet the exchange requirements of FLPMA. Any such exchanges must be funded entirely by the acquiring agency.

E. On an exception basis, the Bureau of Land Management would be willing to acquire specific private lands (from willing owners) within the disposal areas that contain verified remaining significant traces of the Applegate, Applegate-Lassen, Yreka, and Lassen Emigrant Trails. These National Historic Emigrant and Military Trails are unique linear resources on the landscape, and can provide significant values and opportunities within a managed and designated corridor.

F. The 480 acre parcel of public land east of Modoc Estates, in a disposal subregion in MA3 in Modoc County, will be used as the offset for the proposed Modoc National Wildlife Refuge acquisition at Dorris Reservoir.

2.3 Planning Decisions for Both the Retention/Acquisition and the Disposal Areas and Subregions

A. Separate, site-specific environmental analyses would be prepared for each land exchange, sale or other land disposal action conducted under this LTA Plan Amendment. All environmental analyses will comply with legislative and regulatory mandates, including but not limited to FLPMA, NEPA, the Endangered Species Act, the Wilderness Act, the various cultural resource protection laws, Executive Orders on wetlands and floodplains, etc. All land disposal patents would be subject to valid existing rights, and the BLM would consult with holders of permits, rights-of-way, easements and other valid existing uses during the exchange or other disposal process.

B. Third-party exchanges may be used for all lands within the Alturas FO area of jurisdiction, when they are determined to be in the public interest by the Alturas Field Manager. All of the Alturas Plans are hereby amended to reflect this authorized use of third-party exchanges.

C. Implementation of this LTA Plan Amendment by the Alturas FO would be done in compliance with the Memorandum of Agreement (MOA) with the US Fish and Wildlife Service, National Marine Fisheries Service, and the Forest Service. (Through this MOA the BLM agrees to promote the conservation of candidate, proposed and listed species and to consult/confer on listed and proposed critical habitat during the planning process. In accordance with the Endangered Species Act of 1973, the Alturas FO began plan-level Section 7 consultation in December 2000).

D. The following public lands will be held available for transfers to other Federal and State agencies or appropriate private entities through withdrawals or exchanges initiated by those agencies or the BLM:

Lava Beds National Monument: (a) Approximately 200 acres of public lands adjacent to the detached Petroglyph Point section of the Monument are located in Sections 3 and 10 of T. 46 N., R. 5 E., MDM. Inclusion of these lands in the Monument would enhance resource protection and public use values. The BLM will consult with the Bureau of Reclamation (BOR) to determine whether BOR

lands adjacent to the Monument would be suited for transfer to the Park Service. During consideration of this transfer, the Park Service and adjoining private landowners will be consulted to determine whether equitable considerations require that portions of this area be sold or exchanged to the adjoining landowners.

Tule Lake WWII Relocation Center: Public lands associated with the Tule Lake Relocation Center around the Newell Townsite are located in T 47 N., 5E. MDM. This land will be managed for preservation and stabilization and may be transferred to another agency or appropriate private entity once long term plans for preservation of historic lands are completed.

U.S. Forest Service: (a) 400 acres of public land in Cayton Valley in Sections 10 and 15 of T. 37 N., R. 3 E., MDM are best managed by the USFS. These lands are adjacent to and nearly surrounded by Shasta National Forest lands (administered by the Lassen NF) northeast of Lake Britton in Shasta County. (b) 240 acres of public land near Day, in Sections 15 and 24 of T. 39 N., R. 5 E., MDM, and 360 acres of land near Big Lake in Sections 22 and 27 of T. 38 N., R5 E., MDM, in Shasta County, are best managed by the USFS. These lands are adjacent to, and similar in resource management issues to National Forest lands in the Shasta NF (administered by the Lassen NF).

(c) Approximately 1300 acres of public land near Rattlesnake Butte, south of Mt. Hebron, in Siskiyou County, in Sections 2, 4, 8, 10 and 12 of T. 45 N., R. 1 W., MDM, are best managed by the USFS. These lands are adjacent to, and similar in resource management issues to National Forest lands in the Klamath National Forest.

California Department of Fish and Game: Public lands in Section 24 of T. 39 N., R. 7 E., and Section 19 of T. 39 N., R. 8 E., MDM (Pilot Butte) are habitat for a sensitive species (sage grouse). This parcel is best managed as part of the adjacent CDFG Ash Creek Wildlife Area, and would be transferred to the CDFG through an exchange or other action.

E. The Alturas Field Office will consult with appropriate Tribal governments prior to completing any proposed land exchange or sale. In accordance with existing laws and the policies of the Department of the Interior, the BLM will coordinate and cooperate with Native American Tribes in their efforts to acquire land through Act of Congress. The BLM Alturas Field Office will continue to pursue cooperation and consultation through appropriate Tribal Consultation Protocol Agreements. Potential land sales will be examined on a case-by-case basis, as described in Part 1.2 of this plan amendment, to evaluate equitable considerations and public policies that may be used to determine whether a Tribe should be given consideration for purchase as an adjoining landowner, in accordance with Section 203(f) of FLPMA.

2.4 Designation of Retention/Acquisition Areas and of Disposal Areas within the Management Areas identified in the Alturas Plans

The Alturas Plans identify twelve Management Areas (MA) within the Alturas FO, with land tenure decisions within each MA. This LTA Plan Amendment amends those land tenure decisions for the MAs. The following is a summary description of the proposed land tenure amendments for each MA:

- 2.4.1 MA1 - Tablelands This MA will be a **retention/acquisition** area in its entirety. Public lands may be exchanged only for private lands within this MA or within other retention/acquisition MAs.

Public lands within this MA are already managed for a wide range of multiple uses under the Tablelands Integrated Resource Management Plan (1999).

- 2.4.2 MA2 - Rocky Prairie This MA will have a **retention/acquisition subregion** [Rocky Prairie South], and a **disposal subregion** [Warm Springs Valley], as shown on the management area map. Due to prehistoric and historic cultural values, the following public lands within the Warm Springs Valley subregion will be kept in public ownership, in the **custodial** category: Public lands within Sections 26, 27, 32 and 34 of T. 42 N., R. 11 E., MDM.

Public lands in the Rocky Prairie South subregion support a number of important values including livestock grazing, wildlife habitat and recreation.

- 2.4.3 MA3 - Devil's Garden This MA will have two **retention/acquisition subregions** [Devil's Edge and Russell Slough], and two **disposal subregions** [Clover Swale and Mud Lake], as shown on the management area map.

Public lands in the Devil's Edge subregion support important deer winter range and riparian habitat. Public land in the Russell Slough subregion is important for livestock grazing, wildlife values and archeology.

- 2.4.4 MA4 - North Fork This MA will have one **retention/acquisition subregion** [Thoms/Joseph Creek], and two **disposal subregions** [North End and South End], as shown on the management area map. The Thoms/Joseph Creek retention/acquisition subregion contains significant deer winter range and critical public recreation values for Modoc County. Due to significant historic emigrant trail values, the following public lands on the Applegate/Lassen and Applegate Emigrant Trails will be kept in public ownership, in the **custodial** category: Public lands within Sections 2, 9 and 10, T. 46 N., R. 14 E., within Sections 27 and 34, T. 45 N., R. 13 E., and Section 29, T. 45 N., R. 14 E., MDM.

- 2.4.5 MA5 - Big Valley This MA will have four **retention/acquisition subregions** [Roberts Reservoir, Juniper Creek, Rush Creek and Willow Creek], and a **disposal subregion** [Big Valley], as shown on the management area map. Due to antelope winter range values, the following public lands within the Fox Mountain and Barber Ridge portions of the Big Valley subregion will be kept in public ownership, in the **custodial** category: Public lands within Sections 12 and 13 of T. 40 N., R. 7 E., MDM; Sections 18, 19, 30 and 32 of T. 40 N., R. 8 E., MDM; Sections 3, 4, 5, 8, 9 and 10 of T. 39 N., R. 8 E., MDM.

Public lands in the Roberts Reservoir and Juniper Creek subregions support important wildlife and recreation values. Public lands in the Rush Creek subregion and in the Willow Creek subregion contain critical habitat for the Modoc sucker.

2.4.6 MA6 - Widow Peak This MA will be a **limited disposal** area. Public lands may be disposed of only by exchange as described in Part 2.1, and then only for high resource value lands such as those along the Pit River and Hat Creek in Shasta County, or to provide access to the Pit River Canyon WSA, or other compelling reasons within retention/acquisition areas of the Alturas FO.

2.4.7 MA7 - Little Valley This MA will be a **retention/acquisition** area in its entirety. Public lands may be exchanged only for private lands within this MA or within other retention/acquisition MAs.

Public lands in the MA support important wildlife and riparian values as well as livestock grazing.

2.4.8 MA8 - Pit River Canyon This MA is a Wilderness Study Area (WSA) **retention/acquisition** area. Public lands within the WSA may not be exchanged unless Congress finds that such lands are not suitable for wilderness designation. The BLM will seek to acquire private or State lands within this WSA from willing owners, through exchange or purchase, in accordance with the provisions of the BLM's WSA guidelines.

2.4.9 MA9 - Madeline This MA will be a **disposal area**. Public lands may be exchanged as described in Part 2.1.

2.4.10 MA10 - Mountain This MA will be a **retention/acquisition** area in its entirety. Public lands may be exchanged only for private lands within this MA or within other retention/acquisition MAs.

Public lands in this MA support important wildlife, sensitive species and riparian habitat. Recreation use and livestock grazing are other important public land uses.

2.4.12 MA12* - Cinder Cone This MA will have two **retention/acquisition subregions** [Fall River Mills and Hat Creek], and a **disposal subregion** [Cayton Valley], as shown on the management area map. The public lands in the Cayton Valley subregion will be held available for transfer to the U.S. Forest Service.

Public lands and lands proposed for acquisition in the Fall River Mills and Hat Creek subregions include important riparian and sensitive species habitat as well as recreation and archeological values.

2.4.13 MA13 - Mt. Dome This MA will have three **retention/acquisition subregions** [Lower Klamath Lake, Scorpion Point and Horse Mountain], and three **disposal subregions** [Butte Valley, Dorris and Tulelake], as shown on the management area map. Due to prehistoric and historic cultural values, and hazardous materials issues at the old Dorris dump, the following parcels will be kept in public ownership within the Dorris subregion, in the **custodial** category: Public lands within Sections 34 and 35 of T. 48 N., R. 1 E., MDM. Due to prehistoric and historic cultural values, the following parcels will be kept in public ownership within the Tulelake subregion, **in the custodial category**: Public lands within Section 6 of T. 47 N., R. 6 E., MDM (Bloody Point), and public lands within Section 23 of T. 46 N., R. 5 E., MDM.

Public lands in the Lower Klamath Lake subregion support sensitive species, wild horses, wildlife values and livestock grazing. Public lands in the Horse Mountain subregion provide important seasonal ranges and migration habitat for antelope and deer. Public lands in the Scorpion Point subregion contain important prehistoric and historic cultural values.

*Note: MA11, identified in the Alturas RMP, is within the Surprise FO's area of jurisdiction, and is therefore not included within this plan amendment. To avoid confusion with the terminology used in the Alturas RMP, the number "MA11" is deliberately omitted from this plan amendment.

Appendix M

Interim Flat Rock Policy for the Alturas Field Office

**ALTURAS FIELD OFFICE
INTERIM FLAT ROCK POLICY
EFFECTIVE MAY 6, 2002**

BACKGROUND

Historically, the Alturas Field Office has permitted flat rock collection on public land under its jurisdiction. However, the permitting process has grown increasingly unmanageable over the last few years, leading to a suspension of the program in 2001.

We are faced with the following dilemma:

Commercial and personal flat rock collections are legitimate uses of the public land. By issuing permits, the BLM is providing a service to the public and contributing to local economies. However, the permitting process is labor intensive and time consuming. Due to limited staffing, permitting of flat rock collection has a low priority in the Field Office. And, issuing permits with inadequate oversight leads to increased resource theft and damage. Illegal operators use the cover of legitimate operations to become less noticeable. There is also increasing concern that flat rock collection is a vector for the spread of noxious weeds.

Balancing the benefits and costs of flat rock collection on public land is a difficult proposition. In response to the continuing demand for flat rock, we hereby initiate testing of a process whereby much of the clearance and assessment work for commercial operations is the responsibility of flat rock collector. The following information outlines the Interim Policy.

COMMERCIAL FLAT ROCK COLLECTION PROCESS AND POLICY

1. Applicant determines an area of proposed operations on the ground.
 - There must be legal access to the area.
 - Boundaries of proposed areas should be easily recognizable such as drainages, roads or fences.
2. Applicant prepares a topographic map delineating the boundaries of the area of proposed operations along with an estimate of the tonnage proposed for removal.
3. Applicant delivers the map and estimate to the Alturas Field Office.
4. Once the map and estimate are received in the Field Office, the staff has 14 days to review the proposal, notify potential interested parties, and make recommendations on, or adjustments to, the area of proposed operations. The Field Manager makes an initial determination of proposal feasibility and notifies applicant.
5. If the applicant receives the initial go-ahead from the Field Manager, the applicant must then flag the boundaries of the area with pink flagging to the extent that all flagging is visible from adjacent flags.
6. The applicant will then contract with a consultant acceptable to the Field Office to complete archaeological and threatened or endangered species clearances and an environmental assessment on the proposal. Botanical clearances will be completed between April and July when plants are most identifiable and will include identification of prevalent mosses and lichens. The environmental assessment must be completed on the approved Field Office template. The clearances and environmental assessment are then to be delivered to the Alturas Field Office.

7. Once the clearances and EA are received in the Field Office, the staff has 30 days to review the documents and provide comments back to the applicant.
8. The applicant/consultant then finalizes the clearances and environmental assessment and returns the completed documents to the Field Office.
9. Depending on the level of public interest, the staff prepares a FONSI or FONSI/DR for public review.
10. Permit may be issued following the review/appeal period (minimum of 30 days). The permit will include stipulations: a) Limiting collection season (eg. 5/15-10/15). b) Trucks must be washed and free of noxious weeds and weed seed prior to entering public land. c) Permittee must present copies of weight slips for material removed from public lands.

Due to previous planning decisions, there is no flat rock collection authorized in the Cinder Cone Planning Area. This unit includes all areas of Shasta County administered by the Alturas Field Office. Other areas, such as Wilderness Study Areas and Areas of Critical Environmental Concern, are also closed to flat rock collection.

A list of potential EA/clearance consultants is available upon request from the Alturas Field Office. This list does not constitute a recommendation.

PERSONAL USE FLAT ROCK COLLECTION POLICY

Previously approved and worked flat rock collection areas will remain open to personal use only. Authorized personal use will not exceed 3 tons per calendar year per collector. Permits and maps may be obtained at the Alturas Field Office.

ALL FLAT ROCK IS CURRENTLY OFFERED AT \$12 PER TON

Abbreviations and Glossary

Abbreviations

ACEC:	Area of Critical Environmental Concern
AFO:	Alturas Field Office
AML:	Appropriate management level
AMP:	allotment management plan
AMR:	Appropriate management response
AUM:	animal unit month
ATV:	all-terrain vehicle
BA:	biological assessment
BLM:	U.S. Department of the Interior, Bureau of Land Management
BMP:	best management practices
BO:	biological opinion
BP:	before present (in cultural resources discussion)
CAA:	Clean Air Act
CDF:	California Department of Forestry
CDFG:	California Department of Fish and Game
CEQ:	Council on Environmental Quality
CFR:	Code of Federal Regulations
CRMA:	Cultural resource management area
CRMP:	Cultural resource management plan
DBH:	diameter at breast height
DFC:	desired future condition
DOI IB:	U.S. Department of the Interior, Information Bulletin
DPA:	direct protection area
EA:	Environmental Assessment
EIS:	Environmental Impact Statement
EO:	Executive Order
EPA:	United States Environmental Protection Agency
ERMA:	extensive recreation management area
ESA:	Endangered Species Act
ESI:	ecological site inventory
ES&R:	emergency stabilization and rehabilitation

GLOSSARY

FEIS:	Final Environmental Impact Statement
FGDC:	Federal Geographic Data Committee
FLPMA:	Federal Land Policy and Management Act
FPA:	Fire Program Analysis
GIS:	geographic information system
HFRA:	Healthy Forest Restoration Act
HMA:	herd management area
IMP:	Interim Management Policy for Lands under Wilderness Review
IRN:	interim route network
ISA:	instant (wilderness) study area
IWM:	integrated weed management
KGRA:	known geothermal resource area
LD:	limited to designated routes (OHV use)
LE:	limited to existing routes (OHV use)
LHA:	land health assessment
LOP:	limited operating period
LUP:	land use plan
LRU:	land resource unit
LTA:	land tenure adjustment
MFP:	management framework plan
Mg/L:	milligrams per liter
MLRA:	Major Land Resource Area
MOA:	Memorandum of Agreement
MOU:	Memorandum of Understanding
NAGPRA:	National American Graves Protection and Repatriation Act
NCA:	Black Rock Desert–High Rock Canyon Emigrant Trails National Conservation Area
NEPA:	National Environmental Policy Act
NHPA:	National Historic Preservation Act
NPAB:	Northeast Plateau Air Basin
NPS:	National Park Service
NRCS:	Natural Resources Conservation Service
NRHP:	National Register of Historic Places
NSO:	no surface occupancy
NWR:	National Wildlife Refuge

OHV:	off-highway vehicle
PFC:	properly functioning condition
PM:	particulate matter (PM10 = PM less than 10 microns in diameter; PM2.5 = PM less than 2.5 microns in diameter)
PRIA:	Public Rangelands Improvement Act
PU:	planning unit
RAC:	resource advisory council
RAMS:	Risk Assessment and Mitigation Strategies
RFA:	Riparian Functional Assessment
RFD:	Reasonably Foreseeable Development
RHA:	Rangeland Health Assessment
R&PP:	Recreation and Public Purposes Act
RMP:	resource management plan
RNA:	research natural area
ROG:	reactive organic gases
ROS:	Recreation Opportunity Spectrum
ROW:	right-of-way
S&G:	Approved Northeastern California and Northwestern Nevada Standards and Guidelines for Livestock Grazing, (July, 2000)
SHPO:	State Historic Preservation Officer
SRA:	State Responsibility Area
SRMA:	special recreation management area
SRP:	special recreation permit
SSS:	special status species
SYU:	Sustained Yield Unit
TCP:	traditional cultural property
U.S.:	United States
USDA:	United States Department of Agriculture
USDI:	United States Department of the Interior
USFWS:	U.S. Department of the Interior, Fish and Wildlife Service
USFS:	United States Forest Service
USGS:	United States Geological Survey
VRM:	visual resource management
WMA:	wildlife management area
WFU:	wildland fire use

WSA:	wilderness study area
WSR:	wild and scenic river
WUI:	wildland-urban interface

Glossary

Accelerated Erosion – Soil loss above natural levels resulting directly from human activities. Because of the slow rate of soil formation, accelerated erosion can lead to a permanent reduction in plant productivity.

Access Easement – An easement that allows foot, automobile, or other means of access by the public, including access to private property, and is useful for crossing private lands to access public lands.

Activity Plan – See IMPLEMENTATION PLAN.

Actual Use – The number of livestock actually grazing on a given allotment; the use made of forage by livestock or wildlife without reference to permitted or recommended use.

Adaptive Management – An iterative process, designed to experimentally compare selected management actions by evaluating alternative hypotheses about the ecosystem being managed.

Adaptive management consists of three parts: management actions, monitoring, and adaptation. Management actions are treated as experiments subject to modification. Monitoring is conducted to detect the effects of the management actions. Finally, management actions are refined in response to the enhanced understanding of how the ecosystem responds.

Advisory Council on Historic Preservation (ACHP) – An independent federal agency that serves as the chief policy advisor to the President and Congress on matters concerning historic preservation. Included on the 20 member Council are the heads of several federal agencies including the Secretary of the Interior and the Secretary of Agriculture.

Age Class – (1) A descriptive term to indicate the relative age of plants. (2) Refers to age and class of animals (USDA NRCS 1997); vegetation that is roughly the same age.

Aggregate – Any combination of sand, gravel, and crushed stone in its natural or processed state.

Airshed – An area that shares the same air because of topography, meteorology, and climate; an atmospheric zone potentially influenced by air pollutants from various sources.

Aliquot Part – A tract or other parcel of land definitely located by reference to the division of a United States Government survey township into sections (640 acres), 1/2 sections (320 acres), 1/4 sections (160 acres), half-quarter or 1/8 sections (80 acres), quarter-quarter or 1/16 sections (40 acres), 1/32 sections (20 acres), 1/64 sections (10 acres), 1/128 sections (5 acres), or 1/256 sections (2.5 acres).

Alliance – See VEGETATION ALLIANCE.

Allocation – The process of specifically assigning use between and rationing among competing users for a particular area of public land or related waters.

Allotment (range) – An area of land designated and managed for grazing of livestock (43 CFR Subpart 4100 Grazing Administration-Exclusive of Alaska; General §4100.0-5 Definitions).

Allotment Management Categories – A management approach for allotment lands using three categories based mainly on current rangeland condition: Improve (I), Maintain (M), and Custodial (C). Criteria used to assign each of these management approaches are as follows:

Improve – Allotments generally have the potential for increasing resource production or conditions but are not producing at that potential. There may be conflicts or controversy involving resource conditions and uses, but there are realistic opportunities to improve resource conditions.

Maintain – Allotments are in satisfactory resource conditions and are producing near their potential under existing management strategies. There are little or no known resource use conflicts or controversies.

Custodial – Allotments usually consist of relatively small acreages or parcels of public land. Often intermingled with larger amounts of nonfederal lands. There should be no known resource conflicts involving use or resource conditions. Typically, opportunities for positive economic returns from public investments are limited on these lands.

Also see RANGELAND HEALTH ASSESSMENT and ALLOTMENT MANAGEMENT PLAN.

Allotment Management Plan (AMP) – A documented program developed as an activity plan, consistent with the definition at 43 U.S.C. 1702(k), that focuses on, and contains the necessary instructions for, the management of livestock grazing on specified public lands to meet resource conditions, sustained yield, multiple use, economic and other objectives (43 CFR Subpart 4100 Grazing Administration-Exclusive of Alaska; General §4100.0-5 Definitions). (Synonymous with a single activity Implementation Plan)

Allowable Cut – The amount of timber that may be harvested from an area over a specified period of time in accord with the management objectives.

All-Terrain Vehicle (ATV) – A motorized off-highway vehicle, designed to travel on four or more low-pressure tires with or without tracks added, with a seat designed to be straddled by the operator and handlebars for steering.

Alluvial fan – A low, outspread, relatively flat to gently sloping mass of sediment, shaped like an open fan and deposited by a stream where it flows from a narrow mountain valley onto a plain or broad valley (SCS 1993).

Alluvium – Unconsolidated rock or sediment deposited by flowing water including gravel, sand, silt, clay, and various mixtures thereof (SCS 1993).

Alternative – One of at least two proposed means of meeting planning objectives.

Analysis of the Management Situation (AMS) – Chapter 3 in BLM's resource management planning process. An AMS describes a planning area's current public land management and suggests opportunities to better manage this land.

Animal Unit – One mature (1,000-pound) cow or the equivalent, based on an average forage consumption of 26 pounds of dry matter per day.

Animal Unit Month (AUM) – The amount of forage needed to sustain one cow, five sheep, or five goats for 1 month (43 CFR Subpart 4100 Grazing Administration-Exclusive of Alaska; General § 4100.0-5).

Annual Plant – A plant that completes its life cycle within a single growing season (FDGC 1997). Also see PERENNIAL PLANT.

Appropriate Management Level (AML) – The population objective (median number of wild horses and burros) for a herd management area (HMA) that will ensure a thriving ecological balance among all the users and resources of the HMA—for example, wildlife, livestock, wild horses, vegetation, water, and soil.

Appropriate Management Response (AMR) – The response to a wildland fire based on an evaluation of risks to firefighters and public safety; the circumstances under which the fire occurs, including weather and fuel conditions; natural and cultural resource management objectives; protection priorities; and values to be protected. The evaluation must also include an analysis of the context of the specific fire within the overall local geographic area or national wildland fire situation.

Aquifer – A water-bearing bed or layer of rock, sand, or gravel that contains enough saturated permeable material to conduct groundwater and yield large amounts of water to wells or springs.

Archaeological District – A significant concentration, linkage, or continuity of sites important in history or prehistory.

Archaeological Resources Protection Act of 1979 (ARPA) – A federal law that prohibits the removal, sale, receipt and interstate transportation of archaeological resources obtained illegally (without permits), from federal or Indian lands and authorizes agency permit procedures for investigations of archaeological resources on lands under the agency's control.

Archaeology/Archeology – The scientific discipline responsible for recovering, analyzing, interpreting, and explaining the material culture of the historic and prehistoric past.

Area of Critical Environmental Concern (ACEC) – An area of BLM-administered land where special management attention is needed to do the following:

- to protect and prevent irreparable damage to important historic, cultural, or scenic values and to fish and wildlife or other natural systems or processes; or
- to protect life and provide safety from natural hazards.

Archaeological Site – Any place where human-made or modified artifacts, features, or ecofacts are found.

Artifact – A discrete or portable object manufactured or modified by human. Major artifact categories include lithic, ceramic, organic, and metal.

Assemblage – All the artifacts found in a component of a site.

Association – See VEGETATION ASSOCIATION.

Association – The relationship between an artifact and other archaeological finds (other artifacts, features, faunal remains, datable sediments) within an archaeological deposit.

At Risk – A designation of lands that have a reversible loss in productive capability and increased vulnerability to irreversible degradation according to an evaluation of current conditions of the soil and ecological processes (National Research Council 1994). The at-risk designation may point out the need for more information to better determine the functional status of an attribute.

Authorized Officer – Any Bureau of Land Management employee who has been delegated the authority to perform defined duties.

Available Forage – Forage that can be grazed and still allow sustained forage production on rangeland. Available forage may or may not be authorized for grazing.

Avoidance Areas – Areas with sensitive resources where rights-of-way and Section 302 permits, leases, and easements would be strongly discouraged. Authorizations made in avoidance areas would have to be compatible with the purpose for which the area was designated and not otherwise feasible on lands outside the avoidance area. Also see EXCLUSION AREAS.

Back Country Byway – A road segment designated as part of the National Scenic Byway System.

Backfire - A fire set along the inner edge of a fireline to consume the fuel in the path of a wildfire and/or change the direction or force of the fire's convection column.

Band (of horses) – An organized social group of horses in the wild based on the family unit. A band normally contains a dominant stallion, mares, and juveniles.

Bare Ground (bare soil) – All land surface not covered by vegetation, rock, or litter (NRCS 1997).

Basal Area – Basal Area – The cross-sectional area of the stem or stems of a plant or all plants in a stand. Herbaceous and small woody plants are measured at or near the ground level; larger woody plants are measured at breast height (4.5 feet above the ground) or other designated height (NRCS 1997).

Base Flow – The portion of stream discharge derived from such natural storage sources as groundwater, large lakes, and swamps but not derived from direct runoff or flow from stream regulation, water diversion, or other human activities.

Base Metal – A metal inferior in value to gold and silver, a term generally applied to the commercial metals such as copper and lead.

Basin – A geographic area drained by a single major stream and consisting of a drainage system of streams and often natural or artificial lakes also referred to as drainage basin, watershed, or hydrographic region.

Basin and Range – A region of north-south trending mountains ranges and valleys encompassing western Utah and essentially all of Nevada. This geologic territory includes virtually all of the Great Basin and extends north to Oregon; south and east through Arizona, New Mexico, and Texas; and all the way into Mexico. The Basin and Range can be differentiated from its surrounding geologic regions by its uplifted and tilted ranges separated by broad elongated basins. The Great Basin forms a unique part of this geologic region because this hydrologic area has no drainage to the ocean.

Bioengineering – See SOIL BIOENGINEERING.

Biological Assessment – The gathering and evaluation of information on proposed endangered and threatened species and critical habitat and proposed critical habitat. Required when a management action potentially conflicts with endangered or threatened species, the biological assessment is the way federal agencies enter into formal consultation with the Fish and Wildlife Service and describe a proposed action and the consequences to the species the action would affect.

Biological Diversity (Biodiversity) – The full range of variability within and among living organisms and the ecological complexes in which they occur. Biological diversity encompasses ecosystem or community diversity, species diversity, and genetic diversity. In this document, *biodiversity* refers to species richness defined as a number of species in a given habitat or location across habitats.

Biological Fuels Treatments – Methods of vegetation treatment that employ living organisms to selectively suppress, inhibit, or control herbaceous, and wood vegetation. Examples of such methods include insects; pathogens; and grazing by cattle, sheep, or goats.

Biological Integrity – The ability to support and maintain an integrated, adaptive community with a biological composition and functional organization comparable to a region's natural systems; the measure of a system's wholeness, including presence of all suitable elements and occurrence of all processes at suitable rates. Integrity refers to conditions under little or no human influence. A biota with high integrity reflects natural evolutionary and biogeographic processes.

Biological Opinion – A document that includes the following:

- the opinion of the U.S. Fish and Wildlife Service or the National Marine Fisheries Service as to whether a federal action is likely to jeopardize the existence of a species listed as threatened or endangered, or destroy or adversely modify designated critical habitat,
- a summary of the information on which the opinion is based, and
- a detailed discussion of the effects of the action on listed species or designated critical habitat.

Biologic Crusts – A biological community that forms a surface layer or crust on some soils. This community consists of cyanobacteria (blue-green bacteria), microfungi, mosses, lichens, and green algae. This community performs many important functions, including fixing nitrogen and carbon, maintaining soil surface stability, and preventing erosion. Biologic crusts also influence the nutrient levels of soils and the status and germination of plants in the desert. These crusts are slow to recover after severe disturbance, requiring 40 years or more to recolonize even small areas.

Biomass – The total amount of living plants and animals above and/or below ground in an area at a given time (NRCS 1997); plant material that can be burned as fuel.

Biome – A major biotic unit consisting of plant and animal communities having similarities in form and environmental conditions.

Biota – The animal and plant life of a given region.

Biotic Integrity – The capability of a site to support characteristic functional and structural communities in the context of normal variability, to resist loss of this function and structure due to disturbance, and to recover following disturbance (National Research Council 1994).

BLM Sensitive Species – Species designated by a state director, usually in cooperation with the state agency responsible for managing the species and state natural heritage programs, as sensitive. They are those species that: (1) could become endangered in or extirpated from a state. Or within a significant portion of or distribution; (2) are under status review by the U.S. Fish and Wildlife Service and/or National Marine Fisheries Service; (3) are undergoing significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution; (4) are undergoing significant current or predicted downward trends in population or density such that federal listed, proposed, candidate, or State listed status may become necessary; (5) typically have small and widely dispersed populations; (6) inhabit ecological refugia or other specialized or unique habitats; or (7) are State listed but which may be better conserved through application of BLM sensitive species status (BLM 2001a).

Blowout – An excavation in areas of loose soil, usually sand, produced by wind; a breakthrough or rupture of a soil surface attributable to hydraulic pressure, usually associated with sand boils.

Board Foot – The amount of timber equivalent to a piece of wood 12 inches square and 1 inch thick.

Bole – A tree trunk.

Bone Dry Ton (BDT) (Oven Dry Ton) – The amount of wood that would weigh 2,000 pounds at 0% moisture content.

BP – Before present (in cultural resources discussions).

Browse – The part of leaf and twig growth of shrubs, woody vines, and trees available for animal consumption; the act of consuming browse (NRCS 1997).

Brush-Beating – The use of huge special machinery pulled by a tractor to knock over brush to allow understory plants to grow.

Buffer – A strip of natural plant growth that helps to prevent soil erosion from along a river or stream or around a site; a strip of land where disturbances are not allowed, or are closely monitored, to preserve aesthetic and other qualities next to roads, trails, waterways, and recreation sites.

Bulk Density – Mass (weight) per unit volume of undisturbed soil, dried to constant weight at 105°C, Usually expressed as grams/cubic centimeter.

Bunch Grass – Any of various grasses in many different genera that grow in clumplike fashion rather than forming a sod or mat.

Burned Area Emergency Stabilization and Rehabilitation (BAER) – A post-fire process. Emergency stabilization (such as seeding to prevent erosion or the establishing of invasive plants) actions are taken within 1 year of a wildland fire for the following purposes:

- to stabilize the site,
- to prevent unacceptable degradation to natural and cultural resources, and
- to minimize threats to life or property resulting from wildland fire.

Rehabilitation (such as tree planting, invasive plant treatments, and fence replacement) actions are taken within 3 years of a wildland fire to repair or improve lands unlikely to recover from wildland fire or to repair or replace minor facilities damaged by fire.

California Department of Fish and Game (CDFG) – The California state agency whose mission is to manage California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public. CDFG maintains native fish, wildlife, plant species and natural communities for their intrinsic and ecological value and their benefits to people. This includes habitat protection and maintenance in a sufficient amount and quality to ensure the survival of all species and natural communities. CDFG is also responsible for the diversified use of fish and wildlife, including recreational, commercial, scientific, and educational uses (CDFG website).

California National Historic Trail – A trail that stretched from starting points along the Missouri River to points in California and Oregon and was used by more than 200,000 gold seekers and farmers in the 1840s and '50s.

CALVEG – A California statewide system for describing and contrasting vegetation types (alliances) across the state and in mapping their general distributions.

Candidate Species – Plants and animals listed in the *Federal Register* "Notices of Review" that the U.S. Fish and Wildlife Service (USFWS) is considering for listing as threatened or endangered. Two categories are of main concern to BLM:

Category 1 – Taxa for which the USFWS has substantial information on hand to support proposing the species for listing as threatened or endangered. Listing proposals are either being prepared or have been delayed by higher priority listing work.

Category 2 – Taxa for which the USFWS has information to show that listing is possibly appropriate. More information is being collected.

Canopy – The vertical projection downward of the aerial portion of shrubs and trees, usually expressed as a percent of the ground so occupied.

Canopy Fuels – The live and dead foliage, live and dead branches, and lichens of trees and tall shrubs that lie above the surface fuels. Also see SURFACE FUELS.

Carrying Capacity – The maximum stocking rate possible without inducing permanent or long-term damage to vegetation or related resources. The rate may vary from year to year in the same area as a result of fluctuating forage production (NRCS 1997).

Casual Use (Mineral Materials) – Extracting mineral materials for limited personal (noncommercial) uses.

Casual Use (Locatable Mining) – Mining that only negligibly disturbs federal lands and resources and does not include the use of mechanized earth moving equipment or explosives or motorized equipment in areas closed to off-highway vehicles. Casual use generally includes panning, nonmotorized sluicing, and collecting mineral specimens using hand tools.

Casual Use (Recreation) – Noncommercial or nonorganized group or individual activities on public land. Casual use does the following:

- complies with land use decisions and designations, i.e. special area designations,
- does not award cash prizes,
- is not publicly advertised,
- poses minimal risk for damage to public land or related water resources, and
- generally requires no monitoring.

Catastrophic Wildfire – Fire that burns more intensely than the natural or historical range of variability, thereby causing unacceptable erosion, fundamentally changing the ecosystem, or destroying communities of rare or threatened species or habitat.

Categorical Exclusion – A category of actions that do not individually or cumulatively have a significant effect on the human environment and that have been found to have no such effect in procedures adopted by a federal agency and for which, therefore, neither an environmental assessment (EA) nor an environmental impact statement (EIS) is required.

Check Dam – A small dam built in a gully or other small water course to decrease the streamflow velocity, minimize channel erosion, promote deposition of sediment and to divert water from a channel.

Chemical Fuels Treatments – The applying of chemicals to control unwanted vegetation.

Cherry Stem – (roads called “cherry stem”)—roads extend into a Wilderness Study Area (WSA) but are officially outside the WSA. The WSA boundary follows along the edge of the road at the edge of disturbance – up one side, around the far end and back down the other side. Because the appearance of the WSA boundary around the edge of the road resembles a cherry stem on a map, these types of roads are called “cherry stem” roads.

Chiseling – Breaking or loosening the soil, without inversion, with a chisel cultivator or chisel plow.

Clean Water Action Plan (CWAP) – A plan developed by federal agencies in response to President Clinton's request for a comprehensive plan to revitalize the Nation's commitment to protect and restore water resources.

Climax Condition – The final vegetation community and highest ecological development of a plant community that emerges after a series of successive vegetation stages. The climax community perpetuates itself indefinitely unless disturbed by outside forces.

Code of Federal Regulations – The official legal compilation of regulations directing Federal Government agencies.

Collaboration – A cooperative process in which interested parties, often with widely varied interests, work together to seek solutions with broad support for managing public and other lands. Collaboration may or may not involve an agency as a cooperating agency.

Commercial Forest Land – Forested land that can produce new growth at a minimum rate of 20 ft³/acre/year, excluding lands withdrawn from timber production by statute or administrative regulation.

Commercial Thinning – The harvesting of trees that have reached economic maturity; a silviculture treatment that thins out an overstocked stand by removing trees that are large enough to be sold as products such as poles or fence posts. See THINNING and PRECOMMERCIAL THINNING.

Communication Site – A hilltop or favorable signal receiving and transmitting location where a collection of facilities are located. A facility consisting of a small building and tower, used for transmitting or receiving radio, television, telephone, or other electronic signals.

Community (Plant Community) – An assemblage of plants occurring together at any point in time, while denoting no particular ecological status. A unit of vegetation (FGDC 1997).

Community Pit – A designated mineral materials pit, where anyone with a BLM permit may go to acquire such materials as sand and gravel.

Compaction Layer – A near-surface layer of dense soil caused by the repeated impact on or disturbance of the soil surface. When soil is compacted, soil grains are rearranged to decrease the void space and bring them into closer contact with one another, thereby increasing the bulk density (Pellant and others 2000). Also see SOIL COMPACTION.

Component (Cultural Resources) – An association of all the artifacts from one occupation level and one time period at a site.

Composition (Species Composition) – The proportions of plant species in relation to the total in a given area. Composition may be expressed as cover, density, and weight (BLM 1996a).

Condition Class – See FIRE REGIME AND CONDITION CLASS.

Confinement (Confine Strategy) - The strategy employed in appropriate management responses where a fire perimeter is managed by a combination of direct and indirect actions and use of natural topographic features, fuel, and weather factors.

Containment - The status of a wildfire suppression action signifying that a control line has been completed around the fire, and any associated spot fires, which can reasonably be expected to stop the fires spread.

Conformation (Horse) – The physical appearance of an animal due to the arrangement of muscle, bone, and other body tissue. The sum of these body parts and how they blend together determine the acceptability or unacceptability of the horse's conformation. Good conformation is the overall blending of body parts to form a beautiful athlete.

Connectivity – The degree to which habitats for a species are continuous or interrupted across a spatial extent, where habitats defined as continuous are within a prescribed distance over which a species can successfully conduct key activities, and habitats defined as interrupted are outside the prescribed distance.

Conservation Easement – A legal agreement allowing a landowner to transfer selected property rights to a land trust. The landowner retains title to the property, the easement becomes part of the land deed, and all future property owners will be bound by the terms of the easement.

Consistency – Under the Federal Land Policy and Management Act, the adherence of BLM resource management plans to the terms, conditions, and decisions of officially approved and adopted resource related plans, or in their absence, with policies and programs of other federal agencies, state and local governments and Indian tribes, so long as the plans also conform to the purposes, policies, and programs of federal laws and regulations that apply to BLM-administered lands (BLM 2000b).

Contact – Contact with Europeans (in cultural resource discussions).

Context – The position of an archaeological find in time and space, established by measuring and assessing its associations, matrix, and provenience.

Conveyance – In real property law, a transfer of legal title to land; an instrument, such as a deed, by which interest in real property is created or by which title to real property is transferred from grantor to grantee.

Cooperating Agency – An agency that helps the lead federal agency develop the environmental analysis for a proposed major action. U.S. Council on Environmental Quality regulations implementing the National Environmental Policy Act (NEPA) define a cooperating agency as any agency that has jurisdiction by law or special expertise for proposals covered by NEPA. Any North American Indian tribe or federal, state, or local government jurisdiction with such qualifications may become a cooperating agency by agreement with the lead agency. Cooperating agency status is generally formalized through a memorandum of understanding between BLM and the cooperating agency.

Cooperative Management Agreement – A document that describes agreements made between BLM and the public on adjusting grazing use. This document also defines the specific adjustments and the schedule of adjustments (usually over a 5-year period).

Cooperative Weed Management Area – An organization that brings together landowners and private, county, state, and federal managers within a watershed or other geographic area to combine expertise, energy, and resources to implement on the ground a comprehensive weed management program.

Coordinated Resource Management – An approach to reaching decisions and resolving resource conflicts that can complement any planning or management situation involving mixed land ownership or multiple resource management use. The following are elements common to this approach:

- cooperation and equitable voluntary participation of all affected interests, using a team approach;
- open communication among all participants;

- availability of technical expertise;
- strong and effective local leadership;
- agreement by consensus of the team; and
- commitment to monitoring, reviewing, and revising plans, agreements, and projects to ensure that objectives are met.

Corridor – See DESIGNATED CORRIDOR.

Cover – Any form of environmental protection that helps an animal stay alive (mainly shelter from weather and concealment from predators). Also see SOIL COVER.

Critical Habitat – (1) The specific areas within the geographical area currently occupied by a species, at the time it is listed in accord with the Endangered Species Act, on which are found physical or biological features (i) essential to the conservation of the species and (ii) that may require special management considerations or protection, and (2) specific areas outside the geographical area occupied by a species at the time it is listed upon determination by the Secretary of the Interior that such areas are essential for the conservation of the species (50 CFR Part 424-Listing Endangered and Threatened Species and Designating Critical Habitat § 424.02 Definitions).

Cross Fencing – The building of fences across allotments to create more pastures or across pastures to create smaller, easier to manage pastures.

Crown – The upper portion of a tree containing the limbs, twigs, leaves, buds, flowers, and fruit.

Crown Bulk Density – A measure of fuel in the forest canopy used in fire behavior modeling. Crown bulk density is usually calculated by dividing the weight of needles, leaves, and smaller branches by the canopy volume.

Crown Class - an evaluation of an individual tree's crown in relation to its position in the canopy and the amount of full sunlight it receives. The four recognized categories are dominant (D), co-dominant (C), intermediate (I), and overtopped or suppressed (S).

Crown-Sprouting – Growing shoots from a root crown (large vegetative mass just below the soil surface in some plants) after a fire or other disturbance.

Cultural Landscape – A geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values.

Cultural Matrix – A cultural resource site's composition in cultural layers. For example, the removal of vegetation from a site and the resulting erosion can mix artifacts from different layers and disturb or destroy a site's cultural matrix and the information it may contain.

Cultural Resource – Any definite location of past human activity identifiable through field survey, historical documentation, or oral evidence, including archaeological or architectural sites, structures, or places; and places of traditional cultural or religious importance to specified groups, whether or not represented by physical remains.

Cultural Resource Data – Cultural resource information embodied in material remains and manifested in studies, notes, records, diaries, analyses, and published and unpublished manuscripts.

Cultural Resource Integrity – The authenticity of a property's historic identity, evidenced by the survival of physical characteristics that existed during the property's historic or prehistoric period.

Cultural Resource Inventory (Survey) – A descriptive listing and documentation, including photographs and maps of cultural resources. Also included in an inventory are the processes of locating, identifying, and recording sites, structures, buildings, objects, and districts through library and archival research, information from persons knowledgeable about cultural resources, and on-the-ground surveys of varying intensity. The three classes, or levels, of cultural resource inventories (surveys) are the following:

Class I – A professionally prepared study that compiles, analyzes, and synthesizes all available data on an area's cultural resources. Information sources for this study include published and unpublished documents, BLM inventory records, institutional site files, and state and National Register files. Class I inventories may have prehistoric, historic, and ethnological and sociological elements. These inventories are periodically updated to include new data from other studies and Class II and III inventories.

Class II – A professionally conducted, statistically based sample survey designed to describe the probable density, diversity, and distribution of cultural properties in a large area. This survey is achieved by projecting the results of an intensive survey carried out over limited parts of the target area. Within individual sample units, survey aims, methods, and intensities are the same as those applied in Class III inventories. To improve statistical reliability, Class II inventories may be conducted in several phases with different sample designs.

Class III – A professionally conducted intensive survey of an entire target area aimed at locating and recording all visible cultural properties. In a Class III survey, trained observers commonly conduct systematic inspections by walking a series of close-interval parallel transects until they have thoroughly examined an area.

Cultural Resource Management Plan (CRMP) – A plan designed to inventory, evaluate, protect, preserve, or make beneficial use of cultural resources and the natural resources that figured significantly in cultural systems. The objectives of such plans are the conservation, preservation, and protection of cultural values and the scientific study of those values.

Cultural Site – A physical location of past human activities or events, more commonly referred to as an archaeological site or a historic property. Such sites vary greatly in size and range from the location of a single cultural resource object to a cluster of cultural resource structures with associated objects and features.

Cumulative Impacts – The effect on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. The following: Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time (40 CFR Part 1508-Terminology and Index § 1508.7 Cumulative Impact).

Debitage – The sharp-edged waste material left when someone creates a stone tool.

Decadent – Being in a state of decline or decay.

Decision Record – A manager's decision on a categorical exclusion review or an environmental assessment. Comparable to the record of decision for an environmental impact statement, the decision record includes: (1) a finding of no significant impact, (2) a decision to prepare an environmental impact statement, or (3) a decision not to proceed with a proposal. Also see RECORD OF DECISION.

Defensible Space – A natural or human-made area where material that can cause a fire to spread has been treated, cleared, reduced, or changed to act as a barrier between an advancing wildland fire and the loss to life, property, or resources. In practice, "defensible space" is defined as an area of at least 30 feet around a structure that is cleared of flammable brush or vegetation.

Deferred Grazing – Postponing grazing or resting an area for a prescribed period, usually to meet a specific management objective (NRCS 1997). Also see REST.

Deferred-Rotation Grazing – Any grazing system that provides for a systematic rotation of the deferment among pastures. The time of the rest period generally changes in succeeding years (NRCS 1997).

Deposition Area – An area offsite from where the original soil erosion occurred that now has the soil deposits from the original soil erosion area.

Desert Land Entry – An application to acquire title to irrigable arid agricultural public lands for the purpose of reclamation, irrigation, and cultivation in part.

Designated Corridor – BLM's preferred route for placing rights-of-way for utilities (pipelines and power lines) and modes of transportation (highways and railroads).

Desired Future Condition – The future condition of land resources on a landscape scale that meet management objectives. Desired future condition is based on ecological (such as desired plant community), social, and economic considerations during the land and resource planning process. Desired future condition is usually expressed as a ecological status of vegetation (species composition, habitat diversity, age, and size classes of species) and desired soil qualities (conditions of soil cover, erosion, compaction, loss of soil productivity).

Desired Plant Community – One of several plant community types that may occupy an ecological site, the one or combination that meets the minimum quality criteria for the soil, water, air, plant, and animal resources, and that meets the landowner's or manager's objective (NRCS 1997); the plant community that has been determined through a land use or management plan to best meet the plan's objective for the site (BLM 1998a).

Diameter at Breast Height (dbh) – The diameter of a tree 4.5 feet above the ground on the uphill side of the tree.

Directional Drilling – The technique of drilling at an angle from the vertical by deflecting the drill bit.

Direct Protection Area (DPA) – A concept developed by federal and state fire protection agencies to help resolve the management and fiscal complexities of wildland fires burning across intermingled and adjacent areas of state and federal responsibility. Within DPAs, federal and state agencies assume fire protection responsibility for the lands of another agency, along with their own. The agencies also, as nearly as possible, represent the other agencies' interests and objectives. Each agency must, therefore recognize, know, and understand each other's mission objectives, policies, and authorities.

State Responsibility Areas (SRAs) – Land in California for which the state is responsible for wildlife fire protection under California Public Resource Code Sections 4125 to 4127. These lands are often referred to as state and private lands.

Federal Responsibility Areas (FRAs) – Land in national forests for which the U.S. Forest Service is responsible, national park land for which the National Park Service is responsible, and public land for which BLM is responsible for wildland fire protection.

Discharge – The rate of flow or volume of water flowing in a stream at a given place or within a given period of time.

Dispersed Recreation – Recreation activities that do not require developed sites or facilities.

Disposal Areas – Broad areas of public lands where BLM generally intends to dispose of existing public lands, either by land exchange or sale.

Dissolved Oxygen (DO) – The amount of free (not chemically combined) oxygen dissolved in water, wastewater, or other liquid, usually expressed in milligrams per liter, parts per million, or percent of saturation. Adequate concentrations of dissolved oxygen are needed for the life of fish and other aquatic organisms and the prevention of offensive odors. Dissolved oxygen levels are considered the most important and commonly employed measure of water quality and indicator of a water body's ability to support desirable aquatic life.

Disturbance Regime – The historic patterns (frequency and extent) of fire, insects, wind, landslides, and other natural processes in an area.

Dominant Species – Plants that, in abundance, coverage, or size, exert a major controlling influence on the conditions of existence for associated species in the ecosystem. Also see SUBDOMINANT SPECIES.

Drift Fences – Fences built to prevent livestock from wandering from their allotted range.

Duff – The layer of decomposing organic materials lying below the litter layer of freshly fallen twigs, needles, and leaves and immediately above the mineral soil.

Easement – The right to use land in a certain way granted by a landowner to a second party.

Ecofact – Bones, vegetal matter, pollen, shells, modified soils, or other archaeological finds that though not human manufactured, give important clues as to human behavior or the environmental context of such behavior.

Ecological Health – The degree to which the integrity of the soil and ecological processes of ecosystems are sustained (adapted from National Research Council 1994).

Ecological Potential – The capability of an ecological site to function within a normal range of variation in ecological processes in a state, or after having crossed a threshold. The same capability can also apply to a vegetation alliance and association but most normally applies to an ecological site. Also see STATE and THRESHOLD.

Ecological Processes – Processes that include the water cycle (the capture, storage, and redistribution of precipitation) energy flow (conversion of sunlight to plant and animal matter) and the nutrient cycle (the cycle of nutrients, such as nitrogen and phosphorus through the physical and biotic components of the environment). Ecological processes functioning within a normal range of variation at an ecological site will support specific plant and animal communities (Herrick and others 2005).

Ecological Site (Range Site) – A distinctive kind of land that has specific physical characteristics and that differs from other kinds of land in its ability to produce a distinctive kind and amount of vegetation.

Ecological Site Inventory – A resource inventory that involves the use of soils information to map ecological sites and plant communities and the collection of natural resource and vegetation attributes.

The sampling data from each of these soil-vegetation units, referred to as site write-up areas (SWAs), become the baseline data for natural resource management and planning.

Ecological Succession – An ecosystem's gradual evolution to a stable state. If, through the ability of its populations and elements, an ecosystem can absorb changes, it tends to persist and become stable through time.

Ecosystem – A dynamic complex of plant, animal, fungal, and microorganism communities and their associated nonliving environment interacting as an ecological unit (Noss and Cooperrider 1994).

Ecosystem Diversity – The variety of species and ecological processes that occur in different physical settings.

Ecosystem Management – Any land-management system that seeks to protect viable populations of all native species, perpetuate natural-disturbance regimes on the regional scale, adopt a planning timeline of centuries, and allow human use at levels that do not result in long-term ecological degradation (Noss and Cooperrider 1994).

Ecotourism – Tourism that essentially focuses on natural rather than developed attractions with the goal of enhancing the visitor's understanding and appreciation of nature and natural features. Such tourism often attempts to be environmentally sound and to contribute economically to the local community.

Effects – Effects and impacts in the regulations are synonymous. Effects includes ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions that may have both beneficial and detrimental effects, even if on balance the agency believes that the effect will be beneficial.

Effects include

- Direct effects, which are caused by the action and occur at the same time and place and

- Indirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.

Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate and are related effects on air and water and other natural systems, including ecosystems (40 CFR Part 1508-Terminology and Index).

Electrofishing – A fish sampling technique using electric currents and electric fields to control fish movement and/or immobilize fish, allowing capture.

Eligible River – A river or river segment found—through interdisciplinary team and, in some cases, interagency review—to meet Wild and Scenic River Act criteria of being free-flowing and having one or more outstandingly remarkable values.

Endangered Species – Any species defined through the Endangered Species Act as being in danger of extinction throughout all or a significant portion of its range and published in the *Federal Register* (50 CFR Part 424-Listing Endangered and Threatened Species and Designating Critical Habitat § 424.02 Definitions). Also see THREATENED SPECIES.

Entry – An application to acquire title to public lands.

Environmental Assessment (EA) – A concise public document for which a federal agency is responsible. An EA serves (1) to briefly provide enough evidence and analysis for determining whether to prepare an environmental impact statement (EIS) or a finding of no significant impact (FONSI), and to aid an agency's compliance with the National Environmental Policy Act (NEPA) when no EIS is needed; and (2) to facilitate preparing an EIS when one is needed. Also see ENVIRONMENTAL IMPACT STATEMENT and FINDING OF NO SIGNIFICANT IMPACT (FONSI).

Environmental Impact – The positive or negative effect of any action upon a given area or resource.

Environmental Impact Statement (EIS) – A detailed written statement as required by section 102(2)(C) of the National Environmental Policy Act (40 CFR Part 1508-Terminology and Index).

Environmental Justice (EJ) – The fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income in developing, implementing, and enforcing environmental laws, regulations, and policies.

Ephemeral Stream – A stream that flows only in direct response to precipitation, and whose channel is at all times above the water table (BLM 1993).

Erosion – The wearing away of the land surface by running water, waves, or moving ice and wind, or by such processes as mass wasting and corrosion (solution and other chemical processes). The term “geologic erosion” refers to natural erosion processes occurring over long (geologic) time spans. “Accelerated erosion” generally refers to erosion in excess of what is presumed or estimated to be naturally occurring levels, and which is a direct result of human activities (SCS 1993).

Ethnographic – See ETHNOLOGY.

Ethnology – The branch of cultural anthropology that deals with the scientific investigation of living cultures. Ethnology's main data collection technique is participant observation—living with the people being investigated with the intention of full immersion in their culture. Such research is called ethnography.

Eutrophication – The process of enrichment of water bodies by nutrients. Eutrophication of a lake normally contributes to its slow evolution into a bog or marsh and ultimately to dry land. Eutrophication may be accelerated by human activities.

Even Aged Management – Timber management that creates stands of trees that are essentially the same age.

Excess Animals – Wild, free-roaming horses or burros that (1) have been removed from an area by the Secretary of the Interior pursuant to application of law, or (2) must be removed from an area to preserve and maintain a thriving natural ecological balance and multiple use relationship in that area.

Exlosures – Areas of land enclosed by a fence for the purpose of excluding all animals or specified species or groups of animals. Exlosures serve as control areas where biotic factors can be measured, recorded, and evaluated. These can be compared with plots in adjacent areas to which the excluded animals do have access (BLM 1989b).

Exclusion Areas – Areas with sensitive resources where rights-of-way, Section 302 permits, leases, and easements would not be authorized. Also see AVOIDANCE AREAS.

Executive Order 11644 as Amended by Executive Order 11989 – Executive orders (signed respectively by President Nixon in 1972 and President Carter in 1977) issued to control the use of off-highway vehicles on public lands, protect resources, promote the safety of public land users, and minimize conflicts among uses. The order requires federal agencies to monitor the effects of OHV use and to close areas or trails to OHVs if it is determined that their use will damage the soil, vegetation, wildlife, wildlife habitat, or cultural or historic resources.

Existing Ways – Routes inventoried in the 1979 BLM roadless area inventory.

Exotic – All species of plants and animals not naturally occurring, either presently or historically, in any ecosystem of the United States (EO 11987 1977).

Extensive Recreation Management Area (ERMA) – A resource management plan (RMP) allocation for recreation use made for all BLM land covered by the plan but not otherwise allocated in special recreation management areas. In ERMA's

- visitors would engage in dispersed recreation uses;
 - management would emphasize self-sufficient exploration and discovery; and
 - recreation facilities would be developed only as needed to mitigate the impacts of visitor use, protect resources, and provide visitor information and interpretation needed to meet BLM management goals established in the RMP for land health and customer service.
- Also see SPECIAL RECREATION MANAGEMENT AREAS.

Extirpated Species – A locally extinct species; a species that is no longer found in a locality, but exists elsewhere (adapted from Noss and Cooperrider 1994).

Facultative – Capable of existing under different conditions or using different modes for nutrition. For example, facultative wetland plants can occur in either wetlands or uplands although they may be more abundant in the wetlands.

Fault Block – A rock mass bounded by faults on at least two sides.

Feature – A nonportable artifact, such as a house, structure, or storage pit, that cannot be removed from a site. Associated with cultural resources.

Fecal Coliform Bacteria – A group of bacteria that are passed through the fecal excrement of humans, livestock, and wildlife. These organisms can enter rivers through runoff. Although these bacteria do not directly cause disease, high amounts of fecal coliform bacteria suggest the presence of disease-causing agents. Possible diseases caused by this type of water contamination include dysentery, typhoid fever, hepatitis, and gastroenteritis.

Federal Candidate Species – Species not protected under the Endangered Species Act, but being considered by the U.S. Fish and Wildlife Service for inclusion on the list of federally threatened or endangered species.

Federal Land Policy And Management Act (FLPMA) – Public Law 94-579, the act that (1) established, for the BLM, standards for managing the public lands including land use planning, sales, withdrawals, acquisitions, and exchanges; (2) authorized the setting up of local advisory councils representing major citizens groups interested in land use planning and management, (3) established criteria for reviewing proposed wilderness areas, and (4) provided guidelines for other aspects of public land management such as grazing.

Federal Proposed Species – Any species of fish, wildlife, or plant that is proposed in the *Federal Register* to be listed under Section 4 of the Endangered Species Act.

Federal Register – The Federal Government's official daily publication for rules, proposed rules, and notices of federal agencies and organizations, as well as executive orders and other presidential documents.

Fee Interest (Fee Simple or Fee Simple Interest) – Full ownership of a piece of land, including all legal rights of the property. Also see LESS-THAN-FEE INTEREST.

Fibre Saturation Point (fsp) – The moisture content of wood at which all free water is lost from cell cavities and only water bound within the cell walls remains; generally between 25 and 30% moisture content; shrinkage occurs only as wood moisture content drops below fsp.

Fifth-Level Watershed – See STREAM ORDER.

Finding of No Significant Impact (FONSI) – A document prepared by a federal agency, usually accompanying an environmental assessment, that briefly explains why a given action will not have a significant effect on the human environment and why an environmental impact statement (EIS) will therefore not be required. Also see ENVIRONMENTAL ASSESSMENT.

Fireline (Control Line) – An inclusive term for all constructed or natural barriers, and treated fire edges used to control a fire. Also called a fire trail.

Fire Management Plan – A strategic plan that defines a program to manage wildland and prescribed fires and documents the fire management program in the approved land use plan. The fire management plan is supplemented by operational procedures such as preparedness plans, preplanned dispatch plans, prescribed fire plans, and prevention plans.

Fire Management Unit – A fire planning unit in which preparedness strategies are designed to meet watershed or resource management objectives, designated by logical fire control or containment criteria such as watershed basins, sub-basins, ridgetops, topographic features, roads, or vegetation changes.

Fire Return Interval (Fire Frequency) – How often fire burns a given area, expressed as the interval or average time between fires (e.g. fire returns to an area every 5 to 7 years).

Fire Regime – A combination of components that characterize fire in a potential natural vegetation group, including frequency, intensity, seasonality, and extent. Historical fire regimes may differ from current fire regimes, measured by Fire Regime Condition Class. There are five fire regime groups:

Group 1	0 – 35 year frequency	Low Severity
Group 2	0 – 35 year frequency	Stand Replacement
Group 3	35 – 100+ year frequency	Mixed Severity
Group 4	35 – 100+ year frequency	Stand Replacement
Group 5	200+ year frequency	Stand Replacement

Fire Regime Condition Class (FRCC) – A qualitative measure describing the degree of departure from reference (historical) fire regimes. Severe departures may result in alterations of key ecosystem components such as species composition, structural stage, stand age, canopy closure, and fuel loadings. One or more of the following activities may have caused departures: fire suppression, timber harvesting, livestock grazing, introduction and establishment of exotic plant species, introduced insects or diseases, or other management activities. The three condition classes for a fire regime are the following:

Condition Class 1: Fire regimes in this condition class are mostly within historical ranges. Vegetation composition and structure are intact. The risk of losing key components of the ecosystem from fire is low.

Condition Class 2: Fire regimes in this condition class have been moderately altered from their historic range, either by increasing or decreasing the fire frequency. The risk of losing key components of the ecosystem from fire is moderate.

Condition Class 3: Fire regimes in this condition class have been significantly altered from their historical return intervals. Vegetation composition, structure, and diversity have been substantially modified. The risk of losing key components of the ecosystem from fire is high.

Fire Retardant – Any substance except plain water that by chemical or physical action reduces flammability of fuels or slows their rate of combustion.

Fire Suppression – Suppression of wildfires under full suppression or appropriate management response criteria. Also see APPROPRIATE MANAGEMENT RESPONSE.

Fishery – Habitat that supports the propagation and maintenance of fish.

Flag-and-Avoid Approach – An approach to or tactic in cultural resource management under which a cultural resource site is marked with flagging and then avoided.

Flat Rock – Volcanic decorative rock occurring in relatively thin (often less than an inch) layers in northeast California and used for construction, landscaping, and Native American ceremonies.

Forage – All browse and herbage that is available and acceptable to grazing animals or that may be harvested for feed; the act of consuming forage (NRCS 1997).

Forb – Any broad-leafed herbaceous plant that is not a grass, sedge, or rush (NRCS 1997).

Forestlands – Land on which the historic climax plant community is dominated by trees (NRCS 1997).

Fourth-Level Watershed – A sub-basin category in the hydrologic unit hierarchy. The average size of a sub-basin is about 450,000 acres. Also see STREAM ORDER.

Free Use Permit – A permit that allows the removal of timber or other resources from the public lands free of charge.

Fuel Break – A wide strip or block of land on which the native vegetation has been permanently modified so that fires burning into it can be easier to extinguish. In area where cheatgrass is widespread, landowners or managers may install fuel breaks of some other, less fire-prone vegetation to reduce fire spread.

Fuel Load (in fire ecology) – The oven-dry weight of fuel per unit area, usually expressed in tons/acre.

Fuel Loading – The amount of fuel present expressed by weight of fuel per unit area.

Fuel Model – A standardized description of fuels available to a fire based on the amount, distribution, and continuity of vegetation and wood. This information is used for rating fire danger and predicting fire behavior.

Fuel Moisture Content (Fuel Moisture) (in fire ecology) – The water content of a fuel expressed as a percentage of the fuel's oven dry weight. For dead fuels, which have no living tissue, moisture content is determined almost entirely by relative humidity, precipitation, dry-bulb temperature, and solar radiation. The moisture content of live fuels is physiologically controlled within the living plant.

Fuelwood – Trees used for the production of firewood logs or other wood fuel.

Full Suppression – An appropriate management response to wildfire (or an escaped wildland fire use or prescribed fire) that results in curtailment of fire spread and eliminates all identified threats from the particular fire.

Functional Plant Community – A suite or group of species that—because of similar shoot or root structure, photosynthetic pathways, nitrogen-fixing ability, or life cycle—are grouped together on an ecological basis.

Functional/Structural Groups – A suite of species that because of similar shoot (height and volume) or root (fibrous versus tap) structure, photosynthetic pathways, nitrogen fixing ability, or life cycle are grouped together on an ecological site basis (Pellant and others 2000)

Functioning – Refers to health attributes where most of the associated indicators are functioning properly relative to the ecological site description or ecological reference area, given the normal range of variability associated with the site and climate (Pellant and others 2000).

Fundamentals of Rangeland Health – As described in 43 CFR 4180, the conditions in which rangelands are in properly functioning physical condition, ecological processes are supporting healthy biotic populations and communities, water quality is meeting state standards and BLM objectives, and special status species habitat is being restored or maintained.

Gather – The operation in which wild horses are herded to collection points and excess animals are removed either to the adoption system or to holding facilities outside the area.

Geophysical Survey – A scientific method of prospecting that measures the physical properties of rock formations. Common properties investigated include magnetism, specific gravity, electrical conductivity, and radioactivity.

Geographic Information System (GIS) – A computer application used to store, view, and analyze geographical information, especially maps.

Geomorphology – The science dealing with the form and surface configuration of the solid earth. Geomorphology is mainly an attempt to reveal the complex interrelationships between the origin of surface features and the causes of the surface alteration.

Geothermal Energy – Energy produced by tapping the earth's internal heat from hydrothermal convection systems, where water or steam transfers the heat from the deeper part of the earth to the areas where the energy can be tapped.

Global Positioning System (GPS) – A system for providing precise locations for points on the Earth's surface, which is based on data transmitted by satellites.

Goal – A broad statement of a desired outcome. Goals are usually not quantifiable and may not have established timeframes for achievement. Also see OBJECTIVE.

Grandfathered – The status accorded certain properties, uses, and activities that legally existed before the adoption of a law, regulation, or restriction and therefore are not required to adhere to the law, regulation, or restriction. See, for example, VALID EXISTING RIGHTS.

Gravitational Creep – The slow mass movement of soil and soil material down relatively steep slopes, mainly under the influence of gravity but facilitated by saturation with water and alternating freezing and thawing.

Grazing Allotment – See ALLOTMENT.

Grazing Capacity – See CARRYING CAPACITY.

Grazing Cycle – The amount of time required for livestock to rotate completely through all the pastures in an allotment management plan.

Grazing Permit/License/Lease – A contractual agreement between BLM and another party that permits grazing of a specific number, kind, and class of livestock for a specified period on a defined rangeland. The permit allows fee-based use of public land, subject to permit stipulations and annual adjustment based on current rangeland condition.

Grazing Privileges – The use of public land for livestock grazing under permits or leases.

Grazing Rest – See REST.

Grazing Season – An established period for which grazing permits are issued.

Grazing System – A specialization of grazing management that defines systematically recurring periods of grazing and deferment for two or more pastures or management units. Examples of grazing systems include rest-rotation grazing, deferred grazing, deferred rotation grazing (BLM 1989a).

Great Basin – An area covering most of Nevada and much of western Utah and portions of southern Oregon and eastern California consisting mainly of arid, high-elevation desert valleys, sinks (playas), dry lake beds, and salt flats. In the Great Basin all surface waters drain inward to terminal lakes or sinks. None flow to the oceans.

Green Stripping – A common term for a vegetation fuel break system that consists of planned corridors of vegetation to break up large blocks of highly flammable species such as cheatgrass, to improve fire suppression effectiveness. These breaks are planned to be compatible with, and take advantage of, resource development such as seedings and natural barriers (BLM 1985).

Green Timber – Freshly felled or undried timber with its moisture content above the fibre saturation point.

Ground Cover – See SOIL COVER.

Ground Fuel – All combustible materials below the surface litter that normally support a glowing combustion without flame, including duff, tree or shrub roots, punchy wood, peat, and sawdust.

Groundwater – Subsurface water that is in the zone of saturation. The top surface of the ground water is the water table. Groundwater is the source of water for wells, seepage, and springs (NRCS 1997).

Growing Stock – Live sawtimber trees and smaller trees capable of growing into sawtimber trees that meet certain standards of quality.

Guidelines – Practices, methods, or techniques determined to be appropriate to ensure that standards can be met or that significant progress can be made toward meeting standards. Guidelines are tools such as grazing systems, vegetation treatments, or improvement projects that help managers and permittees achieve standards. Guidelines may be adapted or modified when monitoring or other information finds that they are not effective, or a better means of achieving the applicable standard becomes appropriate (USDI 4180). Guidelines for grazing were developed by the Northeast California Resource Advisory Council (RAC) in cooperation with the California State Director. These were given National Environmental Policy Act analysis in the *Rangeland Health Standards and Guidelines for California and Northwestern Nevada Final Environmental Impact Statement* (Appendix B).

Off-highway vehicle (OHV) guidelines developed by the Northeast RAC are a part of this RMP and EIS. Guidelines can only be changed through cooperation between the State Director and the Northeast California RAC and with the approval of the Secretary of the Interior (43 CFR §4180.2).

Guidelines for Livestock Grazing – Livestock grazing management grazing tools, methods, strategies, and techniques designed to maintain or achieve healthy public lands; as defined by the Standards for Rangeland Health (Appendix B). Guidelines for Livestock Grazing within Northeastern California and Northwestern Nevada were developed by the State Director in consultation with the Northeast California Resource Advisory Council (RAC) as directed in 43 CFR Subpart 4180-Fundamentals of Rangeland Health and Standards and Guidelines for Grazing Administration § 4180.2 Standards and guidelines for grazing administration. The Eagle Lake Field Office RMP will establish Guidelines for OHV Use which were also developed by the State Director in consultation with the Northeast California RAC.

Guild – A group of species having similar ecological resource requirements or foraging strategies.

Gully – A very small channel with steep sides cut by running water ordinarily runs only after rain or ice or snow melt. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to wheeled vehicles and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage (SCS 1993).

Guzzler – A device for collecting and storing precipitation for use by wildlife or livestock. A guzzler consists of an impenetrable water collecting area, a storage facility, and a trough from which animals can drink (NRCS 1997).

Habitat – A specific set of physical conditions that surround a species, group of species, or a large community. Wildlife management considers the major constituents of habitat to be food, water, cover, and living space.

Habitat Connectivity – The degree to which similar habitats are linked.

Habitat Diversity – The number of different types of habitat within a given area.

Habitat Maintenance – The care and preserving of the biological resources of conserved habitat, which occur naturally or are created through habitat enhancement techniques.

Habitat Management Plan – A written and approved activity plan for a geographic area of public lands that identifies wildlife habitat management actions to be implemented in achieving specific objectives related to resource management plan/management framework plan planning document decisions (a single-activity form of an implementation plan).

Healthy Forests Initiative – An initiative launched in August 2002 by President Bush to reduce the risks that severe wildfires pose to people, communities, and the environment. The initiative proposes that protecting forests, woodlands, shrublands, and grasslands from unnaturally intensive and destructive fires helps improve the condition of public lands, increases firefighter safety, and conserves landscape attributes valued by society.

Hedging – The appearance of browse plants that have been browsed so as to appear artificially clipped. The consistent browsing of terminal buds of browse species causes excessive lateral branching and a reduction in upward growth.

Herbaceous – Of, relating to, or having the characteristics of a vascular plant that does not develop woody tissue; nonwoody vegetation such as grasses and forbs.

Herbivory – The eating of plants by animals.

Herd – One or more stallions and his mares.

Herd Area – A geographic area occupied by a wild horse or burro and its habitat in 1971.

Herdling – The controlled movement of livestock.

Herd Management Areas (HMAs) – A geographic area of a suitable size and location to provide adequate range for a herd, or herds, occupying the area.

Hibernaculum – The place where an organism spends the winter.

High Site – In forestry, a site that has a higher site index (will grow a tree faster) than a low site. Being a high or low site is a quality that is relative to another site, for example relative from juniper to juniper, pine to mixed conifer, or any site to another. A high juniper site might have a site index of 30, whereas a low juniper site might have a site index of 15. But the high juniper site is a low site when compared to a Douglas-fir low site, which has a site index of 60. See SITE INDEX.

Historic District – An area that generally includes within its boundaries a significant concentration of properties linked by architectural style, historical development, or a past event.

Historic Integrity – See CULTURAL RESOURCE INTEGRITY.

Home Range – The area in which an animal travels in the scope of natural activities; the established territory of a wild animal.

Hydrologic Function (Stability) – The capacity of a site to capture, store, and safely release water from rainfall, run-on, and snowmelt; to resist a reduction in this capacity; and to recover this capacity following degradation. Hydrologic function is one of the three attributes of rangeland health.

Impacts – See EFFECTS.

Implementation Plan – A site-specific plan written to implement decisions made in a land use plan. An implementation plan usually selects and applies best management practices to meet land use plan objectives. Implementation plans are synonymous with “activity” plans. Examples of implementation plans include interdisciplinary management plans, habitat management plans, and allotment management plans.

Incised Channel – A channel that has been cut through the bed of the valley floor and formed by the process of degradation, as opposed to one flowing on a floodplain.

Indian Trust Resource – Any resource in collective tribal holding or individual ownership for which the Secretary of the Interior has a continuing trust responsibility to manage in a manner to benefit the respective tribe or individual. The most common example is extractive resources on a reservation. Some trust lands were set aside as compensation for claims made against the Government, most of which are off-reservation.

(Adapted from: Forest Service National Resource Guide to American Indian and Alaska Native Relations at <http://www.fs.fed.us/people/tribal/>) Also see TRUST ALLOTMENT and TRUST RESPONSIBILITY.

Infiltration – The downward entry of water into the soil or other material.

Infrastructure – The set of systems and facilities that support a region or community's social and economic structures. Examples of such systems include energy, transportation, communication, education, medical service, and fire and police protection.

Ingrowth – The process whereby previously open forest becomes more dense and treed grassland become more densely covered with young trees.

Inholdings – Parcels of land owned or managed by someone other than BLM, but surrounded in part or entirely by BLM-administered land.

Initial Attack – The actions taken by the first resources to arrive at a wildfire to protect lives and property, and prevent further extension of the fire.

Instant Study Areas (ISAs) – Lands that were previously classified as natural or primitive areas and were determined to be ISAs under Section 603 of the Federal Land Policy and Management Act.

Instream Water Right – The right to maintain water in-stream for public use. An instream water right does not require a diversion or any other means of physical control over the water.

Instream Water Use – Typically nonconsumptive uses of water that do not require diversion from its natural watercourse (e.g. fish and other aquatic life, recreation, navigation, esthetics, and scenic enjoyment). Hydroelectric power production is also considered nonconsumptive but may require temporary diversion from the natural streamflow.

Integrated Weed Management Program (IWMP) – A noxious and invasive plants program that emphasizes prevention and education and implements cultural, physical, biological, and chemical treatments to reduce or eliminate weeds.

Interim Management Policy for Lands under Wilderness Review (IMP) (BLM 1995) – BLM's strategy for managing wilderness study areas following their recommendation for designation but before Congress designates them as wilderness or releases them to multiple use management.

Intensive Grazing Management – Grazing management that attempts to increase production or utilization per unit area or production per animal through a relative increase in stocking rates, forage utilization, labor, resources, or capital.

Inter-Basin Water Transfer – The import or export of water from one basin to another. Also see BASIN.

Interim Management Policy for Lands under Wilderness Review (IMP) – A document (BLM 1995) that lays out the requirements for managing BLM wilderness study areas so as "not to impair their suitability as wilderness."

Intermittent Stream – A stream or reach of a stream that does not flow year round and that flows only when it receives baseflow solely during wet periods or it receives groundwater discharge or protracted contributions from melting snow or other erratic surface and shallow subsurface sources (SCS 1993). See EPHEMERAL STREAM.

Interpretation – Conveying information about the origin, meaning, or values of natural or cultural heritage through live, interactive, or static media. Interpretation occurs near the subject and is designed to stimulate visitor interest, increase understanding, and promote support for conservation.

Invasive Species – An alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health (Executive Order 13112 1999).

Keystone Species – A species, such as the beaver, that affects the survival and abundance of many other species in its community.

Known Geothermal Resource Area (KGRA) – An area where geothermal resources are known to exist.

Ladder Fuels – Fuels like shrubs and branches that carry the fire from the ground to the tops of trees.

Land Use Authorization – BLM's authorizing through leases, permits, and easements of uses of the public land. Land use authorizations may allow occupancy, recreational residences and cabin sites, farming, manufacturing, outdoor recreation concessions, National Guard maneuvers, and many other uses.

Leasable Minerals – Minerals whose extraction from federally managed land requires a lease and the payment of royalties. Leasable minerals include coal, oil and gas, oil shale and tar sands, potash, phosphate, sodium, and geothermal steam.

Land Capability Classification – The U.S. Department of Agriculture, Natural Resources Conservation Service's eight classes of land capability according to the risk of land damage or the difficulty of land use. These classes range from *Class I*—Soils with few limitations restricting their use to *Class VIII*—Soils and landforms that preclude their use for commercial plant production and restrict their use to recreation, wildlife, water supply, or aesthetic purposes.

Land Health – The degree to which the integrity of the soil and ecological processes of ecosystems are maintained (National Research Council 1994). The degree to which the integrity of the soil, vegetation, water, and air, as well as the ecological processes of ecosystems, are balanced and sustained (Task Group on Unity in Concepts and Terminology 1995).

Land Health Assessment – The estimation or judgment of the status of ecosystem structures, functions, or processes, within a specified geographic area (preferably a watershed or a group of contiguous watersheds) at a specific time. An assessment is conducted by gathering, synthesizing, and interpreting information, from observations or data from inventories and monitoring. An assessment characterizes the status of resource conditions so that the status can be evaluated (see definition of evaluation) relative to land health standards. An assessment sets the stage for an evaluation. An assessment is not a decision (BLM 2001b).

Land Health Standards – Expressions of levels of physical and biological condition or degree of function required for healthy lands and sustainable uses and for defining minimum resource conditions that must be achieved and maintained (BLM 2001b). Standards for rangeland health for northeast California and northwest Nevada were developed by the Northeast California Resource Advisory Council (RAC) in cooperation with the BLM California State Director. These standards were given National Environmental Policy Act (NEPA) analysis in the *Rangeland Health Standards and Guidelines for California and Northwestern Nevada Environmental Impact Statement* (BLM 1998a). The record of decision (BLM 1999b) was signed by the State Director in June 1999 and was approved by the Secretary of the Interior on July 13, 2001. At the same time the record of decision was signed by the BLM California State Director, Instruction Memorandum CA-99-09, dated June 1, 1999, was issued, stating that the rangeland standards applied to all lands managed by the Bureau of Land Management, California, hence Land Health Standards. Land Health Standards can be changed only through cooperation between the California State Director and the Northeast California RAC with the approval of the Secretary of the Interior (43 CFR §4180.2).

Land Resource Units (LRUs) – Geographic areas, usually of several thousand acres, that have a particular pattern of soils, climate, water resources, and land uses.

Landscape – A heterogeneous land area with interacting ecosystems that are repeated in similar form throughout. Landscapes vary in size, down to a few kilometers (miles) in diameter (Forman and Godron 1986).

Landscape Element – The basic, relatively homogeneous, ecological unit, whether of natural or human origin, on land at the scale of a landscape (Forman and Godron 1986).

Landscape Features – The land and water form, vegetation, and structures that compose the characteristic landscape.

Landscape Structure – The distribution of energy, materials, and species in relation to the size, shapes, numbers, kinds, and configuration of landscape elements or ecosystem (Forman and Godron 1986).

Land Use Allocations – The identification in a land use plan of the activities and foreseeable development that are allowed, restricted, or excluded for all or part of the planning area, based on desired future conditions (BLM 2005).

Land Use Plan – A set of decisions that establish management direction for land within an administrative area, as prescribed under the planning provisions of the Federal Land Policy and Management Act; an assimilation of land-use-plan-level decisions developed through the planning process outlined in 43 CFR 1600, regardless of the scale at which the decisions were developed. Also see RESOURCE MANAGEMENT PLAN.

Late Seral Forest – A forest that has evolved, through successional processes, near to the end of the successional line, or climax forest. Only through disturbance (fire or clear-cutting, for example) will the forest return to an earlier seral (successional) stage.

Leasable Minerals – Minerals whose extraction from federally managed land requires a lease and the payment of royalties. Leasable minerals include coal, oil and gas, oil shale and tar sands, potash, phosphate, sodium, and geothermal steam.

Leave No Trace – A nationwide (and international) program to help visitors with their decisions when they travel and camp on America's public lands. The program strives to educate visitors about the nature of their recreational impacts as well as techniques to prevent and minimize such impacts.

Lek – Traditional small open areas usually from 0.04 to 4 ha (0.1 to 10 acres) surrounded by sagebrush where sage-grouse gather to breed. (synonymous with strutting ground) (Call and Maser 1985) Occupied leks are traditional display areas in or next to sagebrush-dominated habitats that have been attended by \geq two male sage-grouse in ≥ 2 of the previous 5 years (Connelly and others 2000).

Less-Than-Fee Interest – Ownership of land with restricted rights. Also see FEE INTEREST.

Let-Down Fences – Fences that can be taken down but remain in place on the ground when they are not needed.

Life History – The combination of age-specific survival probabilities and fertilities characteristic of a species; the time-table of individual development and aging for a representative organism.

Limited Operating Period – A restriction placed on a management action as to when during the year an event can take place; to protect wildlife species and habitats.

Lithic Scatter – Pertaining to or composed of stones that are dispersed; a form of an archaeological resource.

Litter – The uppermost layer of organic debris on the soil surface, essentially the freshly fallen or slightly decomposed vegetal material (NRCS 1997).

Livestock Trespass – The unauthorized grazing of livestock.

Locatable Minerals – Minerals subject to exploration, development and disposal by staking mining claims as authorized by the Mining Law of 1872 (as amended). Locatable minerals include valuable deposits of gold, silver, and other uncommon minerals not subject to lease or sale.

Location – The act of taking or appropriating a parcel of mineral land, including the posting of notices, the recording thereof when required, and marking the boundaries so they can be readily traced.

Low-Income Population – Persons living below the poverty level according to a particular total income for a family household of four persons and based on the most current data from the U.S. Bureau of Census. The average poverty threshold for a family of four in 1999, based on the most recent census data, was \$17,029.

Low-Site Forest – Forestland with at least 10% canopy cover and producing $< 20 \text{ ft}^3/\text{acre}/\text{year}$ of commercial species. In northeast California, commercial species include Jeffrey pine, ponderosa pine, sugar pine, Washoe pine, Douglas-fir, white fir, and incense cedar. Also see OLD-GROWTH FOREST.

Major Land Resource Areas (MRLAs) – Broad geographic areas that are characterized by a particular pattern of soils, climate, water resources, vegetation, and land use. Each MLRA in which rangeland and forest land occur is further broken into range (ecological) sites (NRCS 1997). Also see LAND RESOURCE UNITS.

Management Actions/Direction – Measures planned to achieve the stated objectives.

Management Activity – An activity undertaken to harvest, traverse, transport, protect, change, replenish, or otherwise use resources.

Management Framework Plans (MFPs) – BLM land use plans that were prepared before 1985 and that have been replaced by resource management plans. Some MFPs are still in effect. Also see LAND USE PLAN and RESOURCE MANAGEMENT PLAN.

Master Title Plat – A plat map showing parcel boundaries and land status of lands, including public lands.

Mastication (Mulching) – In forestry, the chewing up of woody materials into a mulch that remains on the ground, protecting the soil, adding nutrients, and inhibiting the return of shrubs that need bare soil to germinate.

Matrix – The material that surrounds archaeological artifacts before they are excavated.

Mechanical Fuels Treatments – The use of mechanical equipment to suppress, inhibit, or control herbaceous and woody vegetation. BLM uses wheeled tractors, crawler-type tractors, mowers, or specially designed vehicles with attached implements for such treatments.

Mesic – Characterized by having intermediate moisture conditions, i.e. neither decidedly wet nor decidedly dry.

Metadata – Data about data. Data that describes how and when and by whom a particular set of data was collected, and how the data is formatted.

Mineral Entry – The filing of a claim on public land to obtain the right to any minerals it may contain.

Mineral Estate – The ownership of the minerals at or beneath the land's surface.

Mineralization – The processes taking place in the earth's crust resulting in the formation of valuable minerals or ore bodies.

Mineral Materials – Materials such as common varieties of sand, stone, gravel, pumice, pumicite, and clay that are not obtainable under the mining or leasing laws but that can be acquired under the Mineral Materials Act of 1947, as amended.

Mineral Withdrawal – A formal order that withholds federal lands and minerals from entry under the Mining Law of 1872 and closes the area to mineral location (staking mining claims), development, and leasing.

Minimum Pool – The lowest level of reservoir capacity safe for maintaining fish and aquatic life or for some other designated beneficial purpose.

Minimum Tool Principle – A two-part analysis that is a guiding principle applied to wilderness management decisions: (1) Is the action needed to meet legitimate wilderness objectives; and (2) If the action is deemed necessary, what methods and equipment will accomplish the task with least impact on the physical, biological, and social characteristics of wilderness?

Mining Claims – Portions of public lands claimed for possession of locatable mineral deposits by locating and recording under established rules and pursuant to the Mining Law of 1872.

Mining District – An area, usually designated by name, with described or understood boundaries, where minerals are found and mined under rules prescribed by the miners, consistent with the Mining Law of 1872.

Mining Law of 1872 (General Mining Law) – The federal act that, with its amendments, formed the framework for the mining of locatable minerals on the public lands. This law declared that "valuable" mineral deposits rather than simply "mineral deposits" were to be free and open to exploration and purchase, limited individual claims to 20 acres, required \$100 worth of assessment work yearly, and allowed milling or processing claims of 5 acres or less to be entered on nonmineral lands.

Minority – Individuals classified by the Office of Management and Budget Directive No. 15 as Black/African, Hispanic, Asian and Pacific Islander, American Indian, Eskimo, Aleut, and other nonwhite persons.

Minority Population – Identified as either: (1) the minority population of the affected area exceeds 50%, or (2) population percentage of the affected area is meaningfully greater than the minority population percentage in the state or other appropriate unit of geographic analysis.

Mitigating Measures – Modification of actions that (a) avoid impacts by not taking a certain action or parts of an action; (b) minimize impacts by limiting the degree of magnitude of the actions and its implementation, (c) rectify impacts by repairing, rehabilitating, or restoring the affected environment; (d) reduce or eliminate impacts over time by preservation and maintenance operations during the life of the action; or (e) compensate for impacts by replacing or providing substitute resources or environments.

Monitoring – The process of collecting information to evaluate if objectives and anticipated or assumed results of a management plan are being realized or if implementation is proceeding as planned.

Mortality – Death or destruction of forest trees as a result of competition, disease, insect damage, drought, wind, fire and other factors (excluding harvesting).

Motorized Trail – A designated route that allows for the use of small-wheel based motorized vehicles, such as all-terrain vehicles and motorcycles.

Multiple Use – The management of the public lands and their resources so that they are used in the combination that will best meet the present and future needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; the use of some land for less than all of the resources; a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and non-renewable resources, including, but not limited to, recreation, range, timber,

minerals, watershed, wildlife and fish, and natural scenic, scientific and historical values; and harmonious and coordinated management of various resources without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output" (Federal Land Policy and Management Act 1976).

National Ambient Air Quality Standards (NAAQS) – The allowable concentrations of air pollutants in the ambient (public outdoor) air specified in 40 CFR 50. National ambient air quality standards are based on the air quality criteria and divided into primary standards (allowing an adequate margin of safety to protect the public health including the health of "sensitive" populations such as asthmatics, children, and the elderly) and secondary standards (allowing an adequate margin of safety to protect the public welfare). Welfare is defined as including effects on soils, water, crops, vegetation, human-made materials, animals, wildlife, weather, visibility, climate, and hazards to transportation, as well as effects on economic values and on personal comfort and well-being.

National Environmental Policy Act of 1969 (NEPA) – The federal law, effective January 1, 1970, that established a national policy for the environment and requires federal agencies: (1) to become aware of the environmental ramifications of their proposed actions, (2) to fully disclose to the public proposed federal actions and provide a mechanism for public input to federal decision making, and (3) to prepare environmental impact statements for every major action that would significantly affect the quality of the human environment.

National Fire Plan (NFP) – A plan developed in August 2000 to actively respond to severe wildland fires and their impacts to communities while ensuring enough firefighting capacity for the future. The NFP addresses five key points: firefighting, rehabilitation, hazardous fuels reduction, community assistance, and accountability.

National Historic Preservation Act, As Amended (NHPA) – A federal statute that established a federal program to further the efforts of private agencies and individuals in preserving the Nation's historic and cultural foundations. The National Historic Preservation Act: (1) authorized the National Register of Historic Places, (2) established the Advisory Council on Historic Preservation and a National Trust Fund to administer grants for historic preservation, and (3) authorized the development of regulations to require federal agencies to consider the effects of federally assisted activities on properties included on or eligible for the National Register of Historic Places. Also see NATIONAL REGISTER OF HISTORIC PLACES and SECTIONS 106 and 110 OF THE NATIONAL HISTORIC PRESERVATION ACT.

National Historic Trails – Federally designated extended trails that closely follow original routes of nationally significant travel (explorers, emigrants, traders, and military). These trails do not have to be continuous, can be less than 100 miles long, and can include land and water segments. The Iditarod, Lewis and Clark, Mormon Pioneer, and Oregon Trails were the first national historic trails to be designated (in 1978).

National Pollutant Discharge Elimination System (NPDES) – A process for controlling the amount of pollution discharged into waters by requiring polluters to obtain NPDES permits from the states involved and to comply with discharge standards. The NPDES is mandated by the Federal Water Pollution Control Act Amendments.

National Recreation Trails – Trails that provide a variety of outdoor recreation uses in or reasonably accessible to urban areas and recognized by the Federal Government (Secretary of the Interior or Secretary of Agriculture, not Congress) as contributing to the National Trails System. National Register – See NATIONAL REGISTER OF HISTORIC PLACES.

National Register of Historic Places – The official list, established by the National Historic Preservation Act, of the Nation's cultural resources worthy of preservation. The National Register lists archeological, historic, and architectural properties (i.e., districts, sites, buildings, structures, and objects) nominated for their local, state, or national significance by state and federal agencies and approved by the National Register Staff. The National Park Service maintains the National Register. Also see NATIONAL HISTORIC PRESERVATION ACT.

National Trails System – The network of scenic, historic, and recreation trails created by the National Trails System Act of 1968. These trails provide for outdoor recreation needs; promote the enjoyment, appreciation, and preservation of open-air, outdoor areas, and historic resources; and encourage public access and citizen involvement.

National Wild And Scenic Rivers System – A system of nationally designated rivers and their immediate environments that have outstanding scenic, recreational, geologic, fish and wildlife, historical, cultural, and other similar values and are preserved in a free-flowing condition. The system consists of three types of streams: (1) recreation—rivers or sections of rivers that are readily accessible by road or railroad and that may have some development along their shorelines and may have undergone some impoundments or diversion in the past, (2) scenic—rivers or sections of rivers free of impoundments with shorelines or watersheds still largely undeveloped but accessible in places by roads, and (3) wild—rivers or sections of rivers free of impoundments and generally inaccessible except by trails with watersheds or shorelines essentially primitive and waters unpolluted.

Native Species – A plant or animal species that naturally occurs in an area and was not introduced by humans.

Naturalize – To plant randomly, without a pattern to create the effect that the plants grew in that space without human help.

Naturalized Species – Those exotic species which are already occurring within defined areas in a self-sustaining wild state (e.g. English sparrow, ring-necked pheasant, chukar, brown trout, crested wheatgrass, red brome, cheat grass, Russian olive, and dandelion) (BLM 1992).

Natural Vegetation Community – Plant communities that develop in the absence of human activities.

Neotropical Migratory Birds – Birds that travel to Central America, South America, the Caribbean, and Mexico during fall to spend the winter and then return to the United States and Canada during spring to breed. These birds include almost half of the bird species that breed in the United States and Canada.

Niche – The place of an organism in its biotic environment; the position or function of an organism in a community of plants or animals; a microhabitat.

Non-Impairment of Wilderness Values Criteria – A set of criteria regulating land use to protect the wilderness values and characteristics of an area until Congress determines whether to preserve it as a wilderness. The nonimpairment criteria are as follows.

- The use, facility, or activity must be temporary. (This means a temporary use that does not create surface disturbance or involve permanent placement of facilities may be allowed if such use can easily and immediately be terminated upon wilderness designation.
- When the use, activity, or facility is terminated, the wilderness values must not have been degraded so far as to significantly constrain the area's suitability for preservation as wilderness.

The only permitted exceptions to the nonimpairment criteria are the following:

- wildfire or search and rescue emergencies,
- reclamation to minimize impacts of violations and emergencies,
- uses and facilities that are considered grandfathered or valid existing rights under the Interim Management Policy for Lands Under Wilderness Review.
- uses and facilities that clearly protect or enhance the land's wilderness values or are the least needed for public health and safety, and
- reclamation of pre-Federal Land Policy and Management Act impacts.

Nonpoint Source Pollution (Water) – Pollution sources that are diffuse and do not have a single point of origin or are not introduced into a receiving water body from a specific outlet. These pollutants are generally carried off the land by storm water runoff from such sources as farming, forestry, mining, urban land uses, construction, and land disposal.

No Surface Occupancy (NSO) – A fluid mineral leasing stipulation that prohibits occupancy or disturbance on all or part of the land surface to protect special values or uses. Lessees may access the oil and gas or geothermal resources under leases restricted by this stipulation through use of directional drilling from sites outside the NSO area.

Notice-Level Operation – A locatable mining or exploration operation involving more than casual use but disturbing an area of 5 acres or less, and therefore requiring that the operator submit only a notice rather than a plan of operations.

Noxious Plant (Weed) – An unwanted plant specified by federal or state laws as being undesirable and requiring control. Noxious weed refers to any plant that, when established, is highly destructive, competitive, or difficult to control by cultural or chemical practices. Noxious weeds are usually non-natives and highly invasive.

Nutrient Cycling (Cycle) – The circulation of chemical elements such as carbon or nitrogen in specific pathways from the nonliving (abiotic) parts of the environment to organic substances (plants and animals), and then back again to abiotic forms.

Objective – A description of a desired condition for a resource. Objectives can be quantified and measured and, where possible, have established timeframes for achievement (BLM 2000b). Also see GOAL.

Obligate – Restricted to one particularly characteristic mode of life.

Obsidian Hydration – A dating method that measures the thickness of the hydration layer or "rind" of obsidian artifacts, because of the way that obsidian absorbs water.

Occupancy Trespass – The illegal occupation or possession of land or property.

Off-Highway Vehicle (OHV) – Any motorized track or wheeled vehicle designed for cross-country travel over natural terrain. OHVs exclude (1) any non-amphibious registered motorboat; (2) any fire, emergency, or law enforcement vehicle while being used for official or emergency purposes; and (3) any vehicle whose use is expressly authorized by a permit, lease, license, agreement, or contract issued by an authorized officer or otherwise approved. (The term "off-highway vehicle" is used in place of the term "off-road vehicle" to comply with the purposes of Executive Orders 11644 and 11989. The definition for both terms is the same.)

Off-Highway Vehicle (OHV) Use Designations

Open – Designated areas and trails where OHVs may be operated subject to operating regulations and vehicle standards set forth in BLM Manuals 8341 and 8343.

Limited – Designated areas and trails where OHVs are subject to restrictions limiting the number or types of vehicles, date, and time of use; limited to existing or designated roads and trails.

Closed – Areas and trails where OHV use is permanently or temporarily prohibited. Emergency use is allowed.

OHV Play – Nearly unrestricted OHV use whose object is more to have fun and excitement and to challenge one's driving skills than to drive anywhere in particular.

OHV Play Area – An area where on- or off-route OHV use is nearly unrestricted. Often attracting many riders, such areas may be on dunes, in sand and gravel pits, and in other areas that present challenges to OHV users.

Old-Growth (Old Forest) – Ecosystems distinguished by old trees and related structural attributes. The age at which old growth develops and the specific structural attributes that characterize old growth vary widely according to forest type, climate, site conditions, and disturbance regime.

Most old growth is typically distinguished from younger growth by several of the following structural attributes: large trees for species and site; wide variation in tree sizes and spacing; accumulations of large, dead, standing and fallen trees (except in forest types with frequent, low-intensity fires); decadence in the form of broken or deformed tops or bole and root decay; multiple canopy layers (in some forest types); and canopy gaps and understory patchiness.

Orographic - Of or relating to mountains; *especially* associated with or induced by the presence of mountains <orographic rainfall> Produced by the forced ascent of warm air into cooler regions because a mountain range lies in its path.

Outstandingly Remarkable Values – Values among those listed in Section 1(b) of the Wild and Scenic Rivers Act: "scenic, recreational, geological, fish and wildlife, historical, cultural, or other similar values." Other similar values that may be considered include ecological, biological or botanical, paleontological, hydrological, scientific, or research.

Overstory – The upper canopy or canopies of plants. Overstory usually refers to trees, tall shrubs, and vines (NRCS 1997).

Paleontological Resources – The remains of plants and animals preserved in soils and sedimentary rock. Paleontological resources are important for understanding past environments, environmental change, and the evolution of life.

Particulate Matter – Fine liquid (other than water) or solid particles suspended in the air, consisting of dust, smoke, fumes, and compounds containing sulfur, nitrogen, and metals.

Pasturage – Land covered with grass or other vegetation suitable for grazing animals.

Pasture – A subunit of a grazing allotment established and managed generally by building fences or, less commonly, by actively herding livestock.

Patch – A distinct area, such as a polygon or pixel, with a specific habitat type, cover type, or other homogeneous environmental condition.

Patch Size – The area constituting a separate piece of habitat for a species, where the piece is defined as the pixels (smallest mapping unit used to estimate environmental conditions) of habitat adjacent to one another or by some alternative rule set designed for a species.

Patenting Lands – Transferring lands out of government ownership for the first time.

Payment in Lieu of Taxes (PILT) – Federal payments to local governments to offset their inability to collect taxes for federally owned land.

Pedestal – A relatively slender column of soil or rock that is capped by a wider residual or erosional soil or rock.

Perennial Plant – A plant species with a life-cycle that characteristically lasts more than two growing seasons and persists for several years (FGDC 1997). Also see ANNUAL PLANT.

Perennial Stream – A stream or reach of a stream that flows continuously throughout the year and whose surface is generally lower than the water table adjacent to the region adjoining the stream (SCS 1993).

Permeability, Soil – The ease with which gases, liquids (water), or plant roots penetrate or pass through a bulk mass of soil or a layer of soil. Since different soil horizons vary in permeability, the particular horizon under question should be designated.

Permittee – An individual or business that holds a valid grazing permit (43 CFR Subpart 4100 Grazing Administration-Exclusive of Alaska; General).

Petroglyphs – Pictures, symbols, or other art work pecked, carved, or incised on natural rock surfaces.

pH (Hydrogen Ion Concentration) – An expression of both acidity and alkalinity on a scale of 0 to 14, with 7 representing neutrality, numbers less than 7 indicating increasing acidity, and numbers greater than 7 indicating increasing alkalinity.

Pitting – Making shallow pits or basins of suitable capacity and distribution on range to reduce overland flow from rainfall and snowmelt.

Placer - An alluvial deposit of sand and gravel containing valuable minerals such as gold.

Placer Claim - A mining claim located on surficial or bedded deposits, particularly for gold located in stream gravels.

Placer Deposit - Mass of gravel, sand, or similar material resulting from the crumbling and erosion of solid rocks containing particles of gold or other valuable minerals that have been derived from rocks or veins.

Planning Criteria - The constraints or ground rules that guide the developing of a resource management plan. The criteria determine how the planning team develops alternatives and ultimately selects a Preferred Alternative.

Plan of Operations - A plan for mining exploration and development that an operation must submit to BLM for approval when more than 5 acres a year will be disturbed or when an operator plans to work in an area of critical environmental concern or a wilderness area. A plan of operations must document in detail all actions that the operator plans to take from exploration through reclamation.

Plant Association - See VEGETATION ASSOCIATION.

Plant Community - See COMMUNITY.

Plant Vigor - Plant health.

Playa - An ephemerally flooded area on a basin floor that is barren of vegetation, is veneered with fine-textured sediment, and acts as a temporary or final sink for drainage water.

Pleistocene - An epoch in Earth history from about 2-5 million years to 10,000 years ago, when the Earth experienced a series of glacial and interglacial periods.

Ponding - Runoff that collects in depressions and cannot drain out, creating temporary ponds; the process, occurring after a rainfall, of water gathering in low-lying areas, forming ponds.

Population - A group of interbreeding individuals of the same species often occupying the same geographical area.

Possessory Interest Tax - A tax on anyone who has exclusive use of a publicly owned property or facility.

Potential Natural Community (PNC) - The biotic community that would become established on an ecological site if all successional sequences were completed without human interference under the present environmental conditions. Natural disturbances are inherent in its development. The PNC may include acclimatized or naturalized nonnative species (NRCS 1997). Also see POTENTIAL NATURAL VEGETATION, DESIRED FUTURE CONDITION, and PROPER FUNCTIONING CONDITION.

Potential Natural Vegetation (PNV) - The stable biotic community that would become established on an ecological site if all successional stages were completed without human interference under present environmental conditions. The PNV is the vegetation type best adapted to fully use the resources of an ecological site.

Potential Plant Community (PPC) – The seral stage the botanical community would achieve if all successional sequences were completed without human interference under the present environmental conditions.

Precious Metal – A general term for gold, silver, or any of the minerals of the platinum group.

Precommercial Thinning – Cutting trees from a young stand so that the remaining trees will have more room to grow to marketable size. Trees cut in a precommercial thinning have no commercial value, and normally none of the felled trees are removed for use. Also see THINNING AND COMMERCIAL THINNING.

Preferred Alternative – The alternative in this EIS that BLM has initially selected because it best fulfills BLM's mission and responsibilities and offers the most acceptable resolution of the planning issues and management concerns.

Prescribed Fire (Burning) – The planned application of fire to rangeland vegetation and fuels under specified conditions of fuels, weather, and other variables to allow the fire to remain in a predetermined area to achieve such site-specific objectives as controlling certain plant species; enhancing growth, reproduction, or vigor of plant species; managing fuel loads; and managing vegetation community types.

Prey Base – Populations and types of prey species available to predators, for example fish species and populations available to river otters.

Primary Road – Regularly maintained route, paved or unpaved, wide enough for at least two vehicles to pass. A primary road provides access between two major points and serves a large area with many routes of lesser quality branching from it.

Primitive Area – A definition used in the Recreation Opportunity Spectrum (ROS) to characterize an area that is essentially an unmodified natural environment of large size, where interaction between users is very low and evidence of other users is minimal. The area is managed to be essentially free from evidence of human-induced restrictions and controls. Motorized use is not permitted.

Primitive Campground – An undesignated area within or outside the backcountry that lacks any facilities and is maintained only by use.

Primitive Recreation – Recreation that occurs in a natural-appearing environment and that allows visitors to achieve solitude and isolation from human civilization. Primitive recreation may include hunting, horseback riding, wildlife viewing, nature study, photography, hiking, and backpacking.

Progression of Seral Stages (Succession) – The progressive replacement of plant communities on an ecological site that leads to the climax community (e.g. early seral stages are normally dominated by perennial grasses and annual as well as perennial forbs with few shrubs. During mid seral the woody species that the site supports such as shrubs and trees begin to make an obvious appearance, and annual forbs are dominated by perennial forbs. During late seral stages the shrubs normally dominate the cover on the site, but the perennial grasses still provide the most annual production on into the potential natural community)(NRCS 1997). Also see POTENTIAL NATURAL COMMUNITY.

Proper Functioning Condition (PFC) (Riparian-Wetland Areas) – Riparian and Wetland areas are in properly functioning condition and are meeting regional and local management objectives. The riparian and wetland vegetation is controlling erosion, stabilizing streambanks, shading water areas to reduce water temperature, filtering sediment, aiding in floodplain development, dissipating energy, delaying floodwater, and increasing recharge of ground water that is characteristic for those sites. Vegetation surrounding seeps and springs is controlling erosion and reflects the potential natural vegetation for the site (BLM 1999a).

Proper Functioning Condition (Uplands) – Uplands are functioning properly when the existing vegetation and ground cover maintain soil conditions that can sustain natural biotic communities. The functioning condition of uplands is influenced by landform, soil, water, and vegetation.

Proposed Threatened or Endangered Species – Any species of fish, wildlife, or plant that is proposed in the FEDERAL REGISTER to be listed under Section 4 of the Endangered Species Act of 1973, as amended (50 CFR Part 402-Interagency Cooperation-Endangered Species Act of 1973, as Amended § 402.02 Definitions).

Protocol Agreements between BLM and the Nevada and California State Historic Preservation Officers – Agreements that specify the approach for cultural resources protection, including site identification, interpretation, protection, and stabilization.

Public Lands – Any land administered by the Secretary of the Interior through the U.S. Bureau of Land Management or by the Secretary of Agriculture through the U.S. Forest Service.

Pyroclastics – Particles of all sizes ejected into the air during volcanic eruptions, from volcanic ash to bombs and blocks.

Radiocarbon Dating – An age estimate based on the amount of a natural radioactive carbon isotope (carbon-14) that remains in any organic matter (formerly living things such as bone or plants or material made from living things such as cloth and leather).

Rail Banking – A practice of preserving abandoned rail rights-of-way to reuse them for transportation purposes in the future. Federal rail banking law allows railroads to bank unused rail corridors for future rail use while allowing interim use as trails.

Rail Trail – A multi-purpose public path (paved or natural) created along an inactive rail corridor.

Range – See RANGELAND.

Range Drill – A heavy duty seeding machine that is dragged over rough terrain by a tractor or dozer to seed areas.

Range Improvement – Any activity or program on or relating to the public lands designed to improve forage production, change vegetation composition, control use patterns, provide water, stabilize soil and water conditions, or provide habitat for livestock and wildlife. Range improvements may be structural or nonstructural. A structural improvement requires placement or construction to facilitate the management or control the distribution and movement of animals. Such improvements may include fences, wells, troughs, reservoirs, pipelines, and cattleguards. Nonstructural improvements consist of practices or treatments that improve resource conditions. Such improvements include pitting; chiseling; seedings; prescribed burning; water spreaders, contour furrowing, and chemical, mechanical, and biological plant control.

Rangeland – A type of land on which the native vegetation, climax, or natural potential consists predominately of grasses, grasslike plants, forbs, or shrubs. Rangeland includes lands revegetated naturally or artificially to provide a plant cover that is managed like native vegetation. Rangelands may consist of natural grasslands, savannas, shrublands, moist deserts, tundra, alpine communities, coastal marshes, and wet meadows (NRCS 1977).

Rangeland (Land) Health - The degree to which the integrity of the soil, vegetation, water, and air, as well as the ecological processes of the rangeland (land) ecosystem, are balanced and sustained. Integrity is defined as maintenance of the structure and functional attributes characteristic of a locale, including normal variability (Pellant and others 2000).

Rangeland Composition – A list of species present in an area, or discrete vegetation community, and the proportional abundance of each individual species.

Rangeland (Land) Health Assessment – An estimate or judgment of the status of ecosystem structures, functions, or processes, within a specified geographic area (preferably a watershed or a group of contiguous watersheds) at a specific time. Rangeland health is assessed by gathering, synthesizing, and interpreting information, from observations or data from inventories and monitoring. An assessment characterizes the status of resource conditions so that the status can be evaluated (see definition of evaluation) relative to land health standards. An assessment sets the stage for an evaluation. An assessment is not a decision (BLM 2001b).

Rangeland (Land) Evaluation – An evaluation is conducted to arrive at two outcomes. First, an evaluation conducts an analysis and interpretation of the findings resulting from the assessment, relative to land health standards, to evaluate the degree of achievement of Land Health Standards. Second, an evaluation conducts an analysis and interpretation of information—be it observations or data from inventories and monitoring—on the causal factors for not achieving a land health standard. An evaluation of causal factors provides the foundation for a determination (BLM 2001b).

Rangeland (Land) Health Allotment Evaluation Reporting System – A reporting system for grazing allotments as to how they relate to the following four categories:

Category 1 – Areas where one or more standards are not being met, or significant progress is not being made toward meeting the standard(s) and livestock grazing is a significant contributor to the problem.

Category 2 – Areas where all standards are being met or significant progress is being made toward meeting the standard(s).

Category 3 – Areas where the status for one or more standards is not known, or the cause of the failure to meet the standard(s) is not known.

Category 4 – Allotments where one or more of the standards are not being met or significant progress is not being made toward meeting the standards due to causes other than (or in addition to) livestock grazing activities. (Allotments where current livestock grazing is also a cause for not meeting the standards are included in both Categories 1 and 4.)

Rangeland Productivity – The annual total forage availability of the vegetation for an area of rangeland.

Raptors – Birds of prey, such as eagles, owls, and hawks.

Reach – A relatively homogeneous section of a stream having a repetitious sequence of physical characteristics and habitat types.

Record of Decision – A document signed by a responsible official recording a decision that was preceded by the preparing of an environmental impact statement. Also see DECISION RECORD.

Recovery – The return of an unhealthy vegetation alliance, vegetation association, and ecological site back across the degradation threshold to its original community structure, natural complement of species, and natural functions. Also see RESTORATION.

Recreation and Public Purposes Act of 1926 – An act of Congress that allows local governments (counties or cities) and nonprofit organizations to lease or acquire public land to be used for recreation or public purposes such as health, safety, or welfare.

Recreation Management Zone – In recreation management, an area with four defining characteristics: (1) it serves a different recreation niche within the primary recreation market, (2) it produces a different set of recreation opportunities and facilitates attaining different experiences and benefit outcomes, (3) it has a distinctive recreation setting character, and (4) it requires a different set of recreation provider actions to meet primary recreation market demand.

Recreation Opportunity Spectrum (ROS) – A planning process that provides a framework for defining classes of outdoor recreation environments, activities, and experience opportunities. In ROS, the setting, activities, and opportunities for experiences are arranged along a spectrum of six classes: Primitive, Semi-Primitive Non-Motorized, Semi-Primitive Motorized, Roaded Natural, Rural, and Urban. The resulting ROS analysis defines specific geographic areas on the ground, each of which encompasses one of the six classes.

Recreation Site – A developed site with such features as a trailhead, campground, or kiosk.

Recruitment – The successful entry of new individuals into the breeding population (Pellant and others 2000).

Remnant Species – Plant species present in a deteriorated plant association that are representative of a climax plant association.

Research Natural Area (RNA) – An area that is established and maintained for the main purpose of research and education because the land has one or more of the following characteristics: (1) a typical representation of a common plant or animal association; (2) an unusual plant or animal association; (3) a threatened or endangered plant or animal species; (4) a typical representation of common geologic, soil, or water features; or (5) outstanding or unusual geological, soil, or water features (43 CFR Subpart 8223-Research Natural Areas § 8223.0-5 Definitions).

Residual Plant Cover – Standing herbaceous vegetation that has cured and become decayed. When these plants fall, they become litter.

Residue Analysis – The study of remaining material traces that have been subjected to reductive physical or chemical processes.

Resource Advisory Councils (RACs) – Advisory councils appointed by the Secretary of the Interior and consisting of representatives of major public land interest groups (e.g. commodity industries and recreation, environmental, and local area interests) in a state or smaller area.

RACs advise BLM, focusing on a full array of multiple uses public land issues. RACs also help develop fundamentals for rangeland health and guidelines for livestock grazing (§ 4180.2 Standards and guidelines for grazing administration).

Resource Conservation Area (RCA) – A land management designation that provides management consideration to areas with special resources that do not need the levels of protection conferred by designation as an area of critical environmental concern (ACEC).

Resource Management Plan (RMP) – A land use plan as described by the Federal Land Policy and Management Act. The RMP generally establishes in a written document: (1) land areas for limited, restricted or exclusive use; designations, including ACEC designations; and transfer from BLM administration; (2) allowable resource uses (either singly or in combination) and related levels of production or use to be maintained; (3) resource condition goals and objectives to be attained; (4) program constraints and general management practices needed to achieve the above items; (5) need for an area to be covered by more detailed and specific plans; (6) support actions, including such measures as resource protection, access development, realty action, and cadastral survey., as needed to achieve the above; (7) general implementation sequences, where carrying out a planned action depends on prior accomplishment of another planned action; and (8) intervals and standards for monitoring and evaluating the plan to determine its effectiveness and the need for amendment or revision. It is not a final implementation decision on actions that require further specific plans, process steps, or decisions under specific provisions of law and regulations (43 CFR Subpart 1610-Resource Management Planning § 1610.0-5 Definitions).

Rest – The absence of livestock grazing to benefit plants for regrowth between grazing periods, for critical periods of plant growth, and development, or for critical periods of plant establishment (is synonymous with deferred grazing) (NRCS 1997).

Restoration – The act of restoring healthy but lacking key attributes and at-risk states of vegetation alliances, vegetation associations, and ecological sites to a healthy state with its original community structure, natural complement of species, and natural functions. Also see RECOVERY.

Rest-Rotation Grazing – Any grazing system that provides for the rotation of rest (see REST) among pastures. The period of rest can be for a full year or more, or a portion of the growing season. The time and length of rest generally changes each successive year (NRCS 1997).

Retardant – See FIRE RETARDANT.

Right-of-Way (ROW) – A permit or an easement that authorizes the use of public lands for specified purposes, such as pipelines, roads, telephone lines, electric lines, communication sites, reservoirs, and the lands covered by such an easement or permit.

Right-of Way Corridor – A parcel of land that has been identified by law, Secretarial order, or through a land use plan or by other management decision as being the preferred location for existing and future right-of-way grants and suitable for one type of right-of-way or one or more rights-of-way that are similar, identical, or compatible.

Rill – A small channel formed by soil erosion.

Riparian – Area, zone, and/or habitat adjacent to streams, lakes, or other natural free water, which have a predominant influence on associated vegetation or biotic community (NRCS 1997); pertaining to or situated on or along the bank of a stream or other water body.

Riparian Area/Riparian Zone – Terrestrial areas where the vegetation complex and microclimate conditions are products of the combined presence and influence of perennial or intermittent water, high water tables, and soils that exhibit some wetness characteristics. These terms are normally used to refer to the zone within which plants grow rooted in the water table of these rivers, streams, lakes, ponds, reservoirs, springs, marshes, seeps, bogs, and wet meadows.

Riparian Community Type – A repeating, classified, defined, and recognizable assemblage of riparian plant species (USDA NRCS 1997).

Riparian Ecosystems – Ecosystems that occur along watercourses or water bodies. They distinctly differ from surrounding lands because of unique soil and vegetation characteristics that are strongly influenced by free or unbound water in the soil (NRCS 1997).

Riparian Rights – The rights of a land owner to the water on or bordering his property, including the right to prevent diversion or misuse of upstream water.

Riparian Species – Plant species occurring within the riparian zone. Obligate species require the environmental conditions within the riparian zone; facultative species tolerate the environmental conditions and therefore may also occur away from the riparian zone (NRCS 1997).

Riparian Vegetation – Plant communities in the riparian zone consisting of riparian species (NRCS 1997).

Riprap – Large pieces of rock (usually 6 to 30 inches in diameter) that have undergone only primary crushing and sizing, or larger, uncrushed pieces. Riprap is used to stabilize slopes and shorelines and build erosion-control structures.

Road – A transportation facility used mainly by vehicles having four or more wheels documented as such by the owner, and maintained for regular and continuous use. Also see ROUTE, TRAIL, PRIMARY ROAD and SECONDARY ROAD.

Root Ball – The network of roots and the soil clinging to them when a plant is lifted from the soil or removed from a container.

Root Reserve – The ability of plants to store energy (which has been converted from sunlight and water and nutrients from the soil) in their roots to promote plant growth. Overgrazing reduces root reserves, which leads to fewer leaves and a weaker root system.

Route – Any motorized, nonmotorized, or mechanized, terrestrial or water transportation corridor. Roads and trails are considered routes. Also see ROAD and TRAIL.

Runoff – The portion of precipitation or irrigation on an area that does not infiltrate (enter the soil) but is discharged by the area (Pellant and others 2000)

Run-on – Water that flows onto a given area.

R Value – Response “R” values are given to condition classes of sagebrush habitat to reflect that vegetation association’s ability to respond favorably to management or mechanical treatment (Northeast California Sage-grouse Working Group 2005)

Safety Zone – An area cleared of flammable materials used for escape in the event the fireline is outflanked or in case a spot fire causes fuels outside the control line to render the line unsafe.

Sagebrush-Steppe Community – A semiarid plant community characterized by a predominance of big sagebrush and other sagebrush species, plus grasses and forbs

Sagebrush Obligate – A species that is restricted to sagebrush habitats during the breeding season, or year-round.

Saleable Minerals – High volume, low-value mineral resources, including common varieties of rock, clay, decorative stone, sand, and gravel.

Salvage Logging (Harvest) – The removal of dead or downed commercially valuable timber after a disturbance (fire, wind, insect attack, or disease).

Satellite Wild Horse and Burro Adoption – An adoption held away from BLM corrals and facilities at such places as fairgrounds and rodeo grounds that have horse facilities.

Sawlog – A log large enough to yield lumber. Usually the small end of a sawlog must be at least 6 to 8 inches in diameter for softwoods and 10 to 12 inches for hardwoods.

Scenic Byway – A public road having special scenic, historic, recreational, cultural, archaeological, or natural qualities that have been recognized as such through legislation or some other official declaration.

Scoping – An early and open process for determining the scope of issues to be addressed in an environmental impact statement and the significant issues related to a proposed action (40 CFR Part 1508-Terminology and Index).

Secondary Road – A regularly maintained paved or unpaved one-to-two-lane route with routes of less quality branching from it. A secondary road connects primary roads and major points.

Section 404 Permit – A permit required by the Clean Water Act, under specified circumstances, when dredge or fill material is placed in the waters of the United States, including wetlands.

Section 7 – The section of the Endangered Species Act of 1973, as amended, outlining procedures for interagency cooperation to conserve federally listed species and designated critical habitats. Section 7(a)(1) requires federal agencies to use their authorities to further the conservation of listed species. Section 7(a)(2) requires federal agencies to consult with the services to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Other paragraphs of this section

- establish the requirement to conduct conferences on proposed species;
- allow applicants to initiate early consultation;
- require U.S. Fish and Wildlife Services and National Marine Fisheries Service to prepare biological opinions and issue incidental take statements.

Section 7 also establishes procedures for seeking exemptions from the requirements of Section 7(a)(2) from the Endangered Species Committee (USFWS and NMFS 1998).

Section 7 Consultation – The Section 7 processes, including both consultation and conference if proposed species are involved (50 CFR Part 402-Interagency Cooperation-Endangered Species Act of 1973, As Amended).

Section 106 of the National Historic Preservation Act – The section of the National Historic Preservation Act that requires that federal agencies having direct or indirect jurisdiction over a proposed federal, federally assisted, or federally licensed undertaking, before approving the spending of funds or issuing a license, consider the effect of the undertaking on any district, site, building, structure, or object included in or eligible for inclusion in the National Register of Historic Places, and give the Advisory Council on Historic Preservation a reasonable opportunity to comment on the undertaking. Also see NATIONAL HISTORIC PRESERVATION ACT and NATIONAL REGISTER OF HISTORIC PLACES, and SECTION 110 OF THE NATIONAL HISTORIC PRESERVATION ACT.

Section 110 of the National Historic Preservation Act – The section of the National Historic Preservation Act that concerns the managing of federally owned historic properties. Among other provisions, Section 110 requires each federal agency to establish a program to locate, inventory, and nominate to the Secretary of the Interior all properties under its control that appear to qualify for the National Register of Historic Places. Also see NATIONAL HISTORIC PRESERVATION ACT, NATIONAL REGISTER OF HISTORIC PLACES, and SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT.

Sedimentation – The act or process of depositing sediment from suspension in water; all the processes by which particles of rock material are accumulated to form sedimentary deposits.

Sediment Intrusion Buffer – A buffer that helps prevent sediment generated through soil erosion during overland water flow from entering a body of water. Buffer widths are determined by soil erodibility, which is influenced by soil type, slope, and upland soil and vegetation condition upslope from the buffer. Buffers can be vegetative or mechanical. Vegetation buffers are usually naturally occurring, soil-holding native vegetation or are areas that have been reseeded using suitable soil-holding local native species. Mechanical buffers include contour furrows, contour trenches, and erosion fencing (Brooks and others 1991).

Sediment Load (Sediment Discharge) – The amount of sediment, measured in dry weight or by volume, that is transported through a stream cross-section in a given time. Sediment load consists of sediment suspended in water and sediment that moves by sliding, rolling, or bounding on or near the streambed.

Seed Viability – A seed's capability of germinating and growing.

Seeding – The planting of seeds to revegetate the land after a disturbance; an area that has been revegetated by seeding.

Seeds of Success – An interagency program that is coordinated through the Plant Conservation Alliance and that supports and coordinates seed collection of native plant populations in the United States to increase the number of species and the amount of native seed that is available for use in stabilizing, rehabilitating, and restoring lands in the United States.

Scenic Area – The portion of the landscape that is visible from roads, trails, rivers, campgrounds, communities, or other key observation points.

Self Contained Camping - Primitive camping in undeveloped areas where the camper provides everything needed for camping and follows Leave No Trace practices to minimize impacts to the land.

Sensitivity (Cultural Resource) – How prone a cultural resource site is to outside impacts.

Seral Stages – The development stages of ecological succession (NRCS 1997).

Shared Use Trail – A trail shared for a variety of uses such as motorized and nonmotorized uses; a combination of nonmotorized uses such as hiking, horseback riding, and bicycling; or a combination of motorized uses such as dirt bikes and small and large four-wheel vehicles.

Sheet Erosion – The uniform washing or eroding of surface soils on a large denuded surface area.

Shrub-Steppe Community – A plant community of low drought-tolerant shrubs and bunch grasses. A community consisting of one or more layers of perennial grass above which raises a conspicuous but discontinuous layer of shrubs.

Sikes Act Implementation Plans – Comprehensive integrated natural resource management plans based on ecosystem management and required by Public Law 105-85, the Sikes Act Reauthorization Act of 2003. Under this law, the Department of Defense must complete such a plan for all of its installations that have significant fish, wildlife or natural resources. The law requires that these plans include fish and wildlife management and wildlife-oriented recreation; fish and wildlife habitat enhancement; wetland protection; the setting of specific management goals; and the public use of natural resources. These plans must be written in consultation with the U.S. Fish and Wildlife Service and the affected states and must undergo a formal review process every 5 years.

Silviculture – The branch of forestry concerned with cultivating trees.

Site Index – An expression of a site's ability to produce wood growth relative to other sites, expressed in height growth over a century. A site index of 120, therefore, means that a tree will grow from 0 to 120 feet in 100 years.

Sixth-Level Watershed – See STREAM ORDER.

Snag – A standing dead tree that provides food and habitat for creatures such as insects and tree-nesting birds.

Soil Bioengineering – An applied science that combines structural, biological, and ecological concepts to build living structures to control erosion, sediment, and floods. Soil bioengineering is always based on sound engineering practices integrated with ecological principles.

Soil (Ground) Cover – Plants or plant parts, living or dead, on the surface of the ground.

Soil Classification – The systematic arrangement of soil units into groups or categories by their characteristics. Broad groupings are made on the basis of general characteristics and subdivisions on the basis of more detailed differences in specific properties (Pellant and other 2002).

Soil Compaction – Compression of the soil, resulting in reduced soil pore space (the spaces between soil particles), decreased movement of water and air into and within the soil, decreased soil water storage, and increased surface runoff and erosion.

Soil Fertility – The ability of a soil to support plant growth by providing water, nutrients, and a growth medium.

Soil Horizon – A layer of soil or soil material roughly parallel to the land surface and differing from adjacent, genetically related layers in physical, chemical, and biological properties or characteristics, such as color, structure, texture, consistence, degree of acidity or alkalinity, and kinds and numbers of organisms present.

Soil Productivity – The capacity of a soil in its normal environment for producing a specified plant or sequence of plants under a specified system of management.

Soil Profile – A vertical section of the soil from the surface through all of its horizons.

Soil/Site Stability – The capacity of a site to limit redistribution and loss of soil resources (including nutrients and organic matter) by wind and water (one of the three attributes of rangeland (land) health) (Pellant and others 2000).

Soil Structure – The combination or arrangement of primary soil particles into secondary units or peds, which are characterized by size, shape, and grade. Soil structure largely determines the soil's pore space and density, which affect the soil's ability to hold air and water.

Spawning Gravels – Stream-bottom gravels where fish deposit and fertilize their eggs. The covering of these gravels with silt can block the supply of oxygen to the eggs or serve as a cementing agent to prevent fry from emerging.

Special Category Lands – Lands where locatable mining operations always require plans of operations, regardless of the amount of land that would be involved. Special category lands include the following areas:

- areas in the National Wild and Scenic Rivers System and areas designated for potential addition to the system;
- designated areas of critical environmental concern (ACECs); and
- areas designated as closed to off-highway vehicle (OHV) use (as defined in 43 CFR 8340-5); lands or waters known to contain federally proposed or listed threatened or endangered species, or their proposed or designated critical habitat.

Special Interest Plants – Plants on List 2 (not including List 2 plants that are already on the BLM sensitive list) and List 4 in the California Native Plant Society's Inventory of Rare and Endangered Plants of California (Rare Plant Scientific Advisory Committee 2001).

These plants are considered rare by the scientific community but are not included in BLM's sensitive plant list. These plants receive no legal protection but are managed, where possible, on a case-by-case basis by individual field offices to maintain populations and reproductive viability.

Special Management Areas – Areas that may need special management, such as management as an ACEC, RNA, environmental education area, or other special category.

Special Recreation Management Area (SRMA) – An area of intensive recreation use where a commitment has been made to provide specific recreation activity and experience opportunities. SRMAs usually require a high level of recreation investment or management. SRMAs include recreation sites, but recreation sites alone do not constitute SRMAs. Also see EXTENSIVE USE AREA and RECREATION MANAGEMENT ZONE.

Special Recreation Permit (SRP) – An authorization that allows for specific nonexclusive permitted recreational uses of the public lands and related waters. SRPs are issued to control visitor use, protect recreational and natural resources, provide for the health and safety of visitors, and accommodate commercial recreational uses.

Special Status Species – Plant or animal species falling in any of the following categories:

- threatened or endangered species
- proposed threatened or endangered species
- candidate species
- state-listed species
- BLM sensitive species
- BLM special-interest species

Also see SPECIAL INTEREST PLANTS.

Species – From Section 3(15) of the Federal Endangered Species Act: “The term 'species' includes any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature.” A population of individuals that are more or less alike and that can breed and produce fertile offspring under natural conditions.

Species Composition – The proportions of plant species in relation to the total on a given area. It may be expressed in terms of cover, density, or weight (Pellant and others 2000).

Split-Estate – Land whose surface rights and mineral rights are owned by different entities. Such a condition commonly occurs when surface rights are owned by the Federal Government and the mineral rights are privately or state owned.

Stabilization (Cultural Resource) – Protective techniques usually applied to structures and ruins to keep them in their existing condition, prevent further deterioration, and provide structural safety without significant rebuilding. Capping mud-mortared masonry walls with concrete mortar is an example of a stabilization technique.

Stand – A group of trees that occupies a specific area and is similar in species, age, and condition.

Standards and Guidelines (Northeastern California and Northwestern Nevada Standards for Rangeland Health and Guidelines for Livestock Grazing Management) – Standards and guidelines developed collaboratively by BLM and the Resource Advisory Council (RAC) to address the minimum requirements of the Department of the Interior’s final rule for grazing administration, effective August 21, 1995.

Standards for Rangeland (Land) Health – A description of conditions needed to sustain public land health; relates to all uses of the public land. Standards for Northeastern California and Northwestern Nevada were developed by the State Director in consultation with the Northeast California Resource Advisory Council (RAC) as directed in 43 CFR § 4180.2. These standards are applied to all lands administered by the BLM in northeast California and northwest Nevada (Appendix B) and address upland soils, streams, water quality, riparian-wetlands, and biodiversity (BLM 2000a).

Standing Volume – The total volume of wood contained in stems of trees of all size classes in cubic meters. The standing volume includes some nonrecoverable volume but excludes bark.

Stand Replacement Fire Regime – A regime in forests, shrublands, or grasslands in which fires kill or top-kill aboveground parts of the dominant vegetation, substantially changing the aboveground structure. About 80% or more of the aboveground dominant vegetation is either consumed or dies as a result of the fire.

State – One or more biological (including soil) communities that occur on a particular ecological site and that are functionally similar in respect to the three attributes (soil and site stability, hydrologic function, and biotic integrity). States are distinguished by relatively large differences in plant functional groups, soil properties, and ecosystem processes and, consequently, in vegetation structure, biodiversity, and management requirements. They are also distinguished by their responses to disturbance. A number of different plant communities may be included in a state, and the communities are often connected by traditionally defined successional pathways (Herrick and others 2005).

State Historic Preservation Officer (SHPO) – The state official authorized to act as a liaison to the Secretary of the Interior for implementing the National Historic Preservation Act of 1966.

State-Listed Species – Species listed by a state in a category implying but not limited to potential endangerment or extinction. Listing is either by legislation or regulation.

Stewardship Contract – A contract BLM enters into for services to achieve land management goals and meet local and rural community needs, for which a source for performance must be selected on a best-value basis. Section 323 of Public Law 108-7, the Consolidated Appropriations Resolution, 2003, authorizes trading goods for services and multi-year contract authority between 5 and 10 years.

Stipulation – A condition or requirement attached to a lease or contract, usually dealing with protection of the environment or recovery of a mineral.

Stock (Fish) – A group of fish that is genetically self-sustaining and isolated geographically or temporally during reproduction. Generally, stock refers to a local population of fish.

Stocking Rate – The number of specific kinds and classes of animals grazing or using a unit of land for a specific period. Stocking rates may be expressed as a ratio, such as of animal units/section, acres/animal unit, or acres/animal unit month.

Streambanks – The usual boundaries, not the flood boundaries, of a stream channel. Right and left banks are named facing downstream (in the direction of flow).

Streambank Stability – A streambank's relative resistance to erosion, which is measured as a percentage of alteration to streambanks.

Stream Channel – The bed where a natural stream of water runs or may run; the long narrow depression shaped by the concentrated flow of a stream and covered continuously or periodically by water.

Stream Channel Integrity (Stability) – A relative measure of the resistance of a stream to erosion. Stable streams do not change markedly in appearance from year to year. An assessment of stability helps determine how well a stream will adjust to and recover from changes in flow or sediment transport.

Stream Order – A method of numbering streams as part of a drainage basin network. The smallest unbranched mapped tributary is called first order, the stream receiving the tributary is called second order, and the stream receiving that tributary is called the third order, and so on. Stream order may depend on the scale of the map used. A first-order stream on a 1:62,500 map may be a third-order stream on a 1:12,000 map.

Structural Diversity – Variety in a vegetation type that results from layering or tiering of the canopy and understory and the dieback, death and ultimate decay of plants; the diversity of the composition, abundance, spacing, and other attributes of plants in a community.

Structure – The height and area occupied by different plants or life forms in a community.

Stubble – The basal portion of herbaceous plants remaining after the top portion has been harvested either artificially or by grazing animals.

Subdominant Species – An important species within a plant community, but one that is less prevalent, smaller, or less important than the dominant species. Also see DOMINANT SPECIES

Subeconomic Mineral – A mineral that at present is unavailable for use because of the high cost of extraction.

Substrate – Mineral and organic material forming the bottom of a waterway or water body; the base or substance upon which an organism is growing.

Succession – The progressive replacement of plant communities on an ecological site that leads to the climax community. Early seral stages are normally dominated by perennial grasses and annual as well as perennial forbs with few shrubs. During mid seral the woody species that the site supports such as shrubs and trees begin to make an obvious appearance, and annual forbs are dominated by perennial forbs. During late seral the shrubs normally dominate the cover on the site, but the perennial grasses still provide the most annual production on into the potential natural community (NRCS 1997). Also see POTENTIAL NATURAL COMMUNITY.

Suckering – A common method of asexual reproduction in the willow family by which suckers sprout up from the roots of mother trees, forming new trees.

Suitable River – A river segment found through administrative study by an appropriate agency to meet the criteria for designation as a component of the National Wild and Scenic Rivers System, as specified in Section 4(a) of the Wild and Scenic Rivers Act.

Suite – A group or array of characteristics associated with a given organism or species.

Suppression – A management action intended to protect values from a fire, extinguish a fire, or alter a fire's direction of spread.

Surface Fuels – Needles, leaves, grass, forbs, dead and down branches and boles, stumps, shrubs, and short trees.

Sustained Yield – Achieving and maintaining a permanently high level, annual or regular period production of renewable land resources without impairing the productivity of the land and its environmental values (FLPMA 1976).

Sylvaglyphs (Dendroglyphs) – Historic carvings found on the bark of smooth-bark trees, often aspens.

Take – To harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct (Endangered Species Act § 3 (19) 1973). Harm is further defined by the U.S. Fish and Wildlife Service (USFWS) as to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. USFWS defines Harass as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns that include breeding, feeding, or sheltering (50 CFR Part 17-Endangered And Threatened Wildlife And Plants§ 17.3 Definitions).

Talus – A sloping heap of loose rock fragments lying at the foot of a cliff or steep slope.

Taylor Grazing Act – An act passed in 1934 that provides for the regulation of grazing on the public lands (excluding Alaska) to improve rangeland conditions and stabilize the western livestock industry.

Terms and Conditions – The provisions and stipulations specified by BLM as part of a livestock grazing permit or other land use authorization.

Terracette – Benches of soil deposition behind obstacles caused by water, not wind, erosion (Pellant and others 2000).

Thinning – A tree removal practice that reduces tree density and competition between trees in a stand. Thinning concentrates growth on fewer, high-quality trees, provides periodic income, and generally enhances tree vigor. See COMMERCIAL THINNING and PRECOMMERCIAL THINNING.

Thinning from Below – The removal of trees from the middle and upper crown classes in a stand, to favor the most promising trees of these classes.

Threatened Species – Any species defined through the Endangered Species Act (ESA) as likely to become endangered within the foreseeable future throughout all or a significant portion of its range, as published in the *Federal Register* (ESA § 3 (20) 1973). Also see ENDANGERED SPECIES.

Threshold – A transition boundary that an ecosystem crosses that results in a new stable state that is not easily reversed without significant inputs in resources (Herrick and others 2005). Ecological thresholds describe a complex set of potentially interacting components, rather than discrete boundaries in time and space. “A specific disturbance or event may trigger the occurrence of a threshold that effects both structural and functional modifications during ecosystem transitions at various time scales.” “The potential for threshold reversibility depends upon the extent and duration of ecosystem modifications, especially those altering nutrient and water cycles and energy flow pathways” (Briske and others 2005). “One or more of the primary ecological processes has been irreversibly changed and must be actively restored before return to the previous state is possible” (Stringham and others 2003).

Trace Metals – Metals that are present in small concentrations.

Traditional Cultural Property (TCP) – A property that is eligible for the National Register of Historic Places because of its association with a living community’s cultural practices or beliefs that are important in maintaining the continuing community’s cultural identity. TCPs are essential to maintaining the cultural integrity of many Native American Indian nations and are critical to the cultural lives of many of their communities.

Trail – A linear route managed for human-powered, stock, or off-highway vehicle forms of recreation or for historic or heritage values. Trails are not generally managed for use by four-wheel drive or high-clearance vehicles. Also see ROUTE and ROAD.

Trail Alignment – The topographic location of a trail in relation to local landforms. Trail alignment can be expressed by the slope alignment angle. Trails can be aligned parallel to the prevailing slope (0° angle), perpendicular to the slope (90° angle), or at any angle in between (1 - 89° angle).

Trailing – Controlled directional movement of livestock; the habit of livestock or wildlife of repeatedly treading in the same line or path.

Trail Tread – The walking surface of a trail.

Transition – A shift from one state to another on an ecological site, or within vegetation alliances or associations (NRCS 1997).

Trailhead – The terminus of a hiking, horse, or bicycle trail accessible by motor vehicle and sometimes

Tread Lightly – An educational program designed to instill outdoor ethics of responsible behavior when participating in outdoor activities.

Trespass: – Any occupancy, use, or development of the public lands or their resources of the United States without authority.

Trophic Level: The level in a nutritive series of an ecosystem in which a group of organisms in a certain stage in the food chain secures food in the same general manner. The first or lower trophic level consists of producers (green plants), the second level consists of herbivores, the third level consists of secondary carnivores, and the fourth level consists of reducers (decomposers).

Trust Allotment – Federal land set aside for the exclusive use of an Indian, who is the allottee. The Federal Government retains land ownership. Many allotments are outside Indian reservations and are called public domain allotments. (Forest Service National Resource Guide to American Indian and Alaska Native Relations at <http://www.fs.fed.us/people/tribal/>)

Trust Responsibility – This term has never been defined by the U.S. Congress, any president, or any cabinet official. Generally, a set of principles and concepts outlining the responsibilities of the U.S. Government to act as the trustee of Indian people and Indian-owned assets. The U.S. Government, through the President, has certain responsibilities to protect Indian property and rights, Indian lands, and resources. The trust responsibility may involve a fiduciary obligation in which the President, through the Secretary of the Interior, acts as the trustee of the Indian assets. Fulfilling or redeeming a trust responsibility can best be reflected or demonstrated as a matter of action; a stream that was protected, a site that was maintained intact, a property right that has been left unaffected by a federal action. The writing of an environmental document is not an example of fulfillment of a trust responsibility. (Forest Service National Resource Guide to American Indian and Alaska Native Relations at <http://www.fs.fed.us/people/tribal/>.)

Turbidity – A measure of cloudiness of water, which is a function of the suspended organic and inorganic material.

Turn Out Area – A location within an allotment or grazing area where livestock are placed to achieve management objectives, generally at the beginning of the grazing season but possibly throughout the grazing season as livestock are moved into new use areas.

Unallotted Lands – Public lands that are open to grazing but currently have no livestock grazing authorized.

Underburning – Prescribed burning under a timber canopy.

Understory – Plants growing under the canopy of other plants. Understory usually refers to grasses, forbs, and low shrubs under a tree or brush canopy.

Ungulates – Hoofed animals, including ruminants such as cows, sheep, goats, and deer, but also horses, tapirs, elephants, rhinoceroses, and swine.

Upland Game – A term used in wildlife management to refer to hunted animals that are neither big game nor waterfowl. Upland game includes such birds as grouse, turkey, pheasant, quail, and dove, and such mammals as rabbit and squirrel.

Uplands – Lands at higher elevations than alluvial plains or low stream terraces; all lands outside the riparian wetland and aquatic zones.

Utilization – The proportion of the current year's forage production that is consumed or destroyed by grazing animals. Utilization may refer to a single species of forage or to all forage as a whole.

Utility Corridor – A parcel of land, without fixed limits or boundaries, that is being used as the location for one or more utility rights-of-way (43 CFR Part 2800-Use; Rights-Of-Way, Principles and Procedures § 2800.0-5 Definitions).

Valid Existing Rights – Locatable mineral development rights that existed when the Federal Land Policy and Management Act (FLPMA) was enacted on October 21, 1976. Some areas are segregated from entry and location under the Mining Law to protect certain values or allow certain uses. Mining claims that existed as of the effective date of the segregation may still be valid if they can meet the test of discovery of a valuable mineral required under the Mining Law. Determining the validity of mining claims located in segregated lands requires BLM to conduct a validity examination and is called a “valid existing rights” determination.

Vascular Plants – Any of various plants, such as the ferns and seed-bearing plants, in which the phloem transports sugar and the xylem transports water and salts.

Vault Toilet – An outdoor toilet without running water that has a sealed underground vault for holding wastes and from which waste is pumped out.

Vector – Any person, animal or a thing that carries the seeds of noxious weeds from one place to another and promotes their invasion and spread.

Vegetation Alliance - A vegetation classification unit containing one or more associations, and defined by a characteristic range of species composition, habitat conditions, physiognomy, and diagnostic species, typically at least one of which is found in the uppermost or dominant stratum of the vegetation (E.g. Forestland, Shrubland) (ESA 2004).

Vegetation Association - A vegetation classification unit defined by a characteristic range of species composition, diagnostic species occurrence, habitat conditions, and physiognomy (e.g. Mountain big sagebrush/perennial grass) (ESA 2004).

Vegetative Fuel Break System - Planned corridors of vegetation to break-up large blocks of highly flammable species such as cheatgrass, to improve fire suppression effectiveness. These breaks are planned to be compatible with, and take advantage of, resource development such as seedings and natural barriers (BLM 1985).

Vertisols – Dark black soils rich (at least 30%) in expandable clay that readily swells when wet and shrinks when dried. Vertisols are one of the U.S. Department of Agriculture soil orders.

Viable Population – Wildlife or plant population that contains an adequate number of reproductive individuals to appropriately ensure the long-term existence of the species (Noss and Cooperrider 1994).

Viewshed – The entire area visible from a viewpoint.

Vigor – The capacity for natural growth and survival of plants and animals.

Visual Resource Management (VRM) – The inventory and planning actions to identify visual values and establish objectives for managing those values and the management actions to achieve visual management objectives.

Visual Resource Management (VRM) Classes – Categories assigned to public by scenic quality, sensitivity level, and distance zones. Each class has an objective that prescribes the amount of modification allowed in the landscape. The four classes are as follows:

Class I: The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes, but it does not preclude very limited management activities. The level of change to the characteristic landscape should be very low and must not attract attention.

Class II: The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen but should not attract the attention of the casual observer. Any change must repeat the basic element of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

Class III: The objective of this class is to partially retain the landscape's existing character. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements in the predominant natural features of the characteristic landscape.

Class IV: The objective of this class is to provide for management activities that require major changes to the landscape's existing character. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of the viewer's attention. But every attempt should be made to minimize the impact of these activities by careful location, minimal disturbance, and repeating the basic elements of the characteristic landscape.

Waterfowl Nesting Island – A wildlife habitat improvement that consists of a vegetated mound of dirt built in a lake or reservoir to provide cover and distance from the shoreline for nesting waterfowl.

Water Quality – Within the context of the Land Health Standards, water quality means that "water will have characteristics suitable for existing and potential beneficial uses. Surface and groundwater complies with objectives of the Clean Water Act and other applicable water quality requirements, including meeting the California and Nevada State standards, excepting approved variances" (BLM 2000a).

Water Reserve – An area set aside for the protection and use of water on or under the land for public water supplies.

Water Right – A right to use, in accord with its priority, a certain portion of the waters of the state for irrigation, power, domestic use or another similar use

Watershed – An area of land from which water drains toward a single stream. The watershed is a hydrologic unit often used as a physical-biological unit and a socioeconomic-political unit for planning and managing natural resources.

Waters of the State – All streams, lakes, ponds, marshes, watercourses, waterways, wells, springs, irrigation systems, drainage systems, and all other bodies of water above or below ground that are partially or wholly within a state. Private waters that do not combine or have a junction with natural surface or underground waters are not included (such as an isolated stock pond that does not infiltrate to groundwater or connect to surface water).

Water Table (Ground Water Table) – The level of groundwater; the upper surface of the zone of saturation for underground water. The water table is an irregular surface with a slope or shape determined by the amount of groundwater and the permeability of the earth material.

Way – A travel route that was not constructed but rather was worn onto the surface of the land by repeat passage of vehicles. Also see EXISTING WAYS.

Wetlands or Wetland Habitat – Areas characterized by soils that are usually saturated or ponded; i.e., hydric soils, and that support mostly water-loving plants; i.e. hydrophytic plants (NRCS 1997). Wetlands generally include swamps, marshes, bogs, and similar areas.

Weed Management Areas (WMAs) – Local organizations that bring together landowners and managers (private, city, county, state, and federal) in a county, multi-county, or other geographical area to coordinate efforts and expertise against common invasive weed species.

Wickiup – A temporary dwelling of nomadic Native North Americans. It consists of a framework of arched poles covered by brush, bark, rushes, or mats. The wickiup is found among Native Americans in Arizona, New Mexico, Utah, Idaho, and California. Sometimes other dwellings of tribes in this region are called wickiups even when made of more permanent materials. The name is also spelled wickiup.

Wild and Scenic River System – A national system of rivers or river segments that have been designated by Congress and the President as part of the National Wild and Scenic Rivers System (Public Law 90-542, 1968). Each designated river is classified as one of the following:

Wild River – A river or section of a river free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. Designated wild as part of the National Wild and Scenic Rivers System.

Scenic River – A river or section of a river free of impoundments, with shorelines or watersheds still largely primitive and undeveloped but accessible in places by roads. Designated scenic as part of the National Wild and Scenic Rivers System.

Recreational River – A river or section of a river that is readily accessible by road or railroad, may have some development along its shorelines, and may have undergone some impoundment or diversion in the past. Designated as recreational as part of the National Wild and Scenic Rivers System.

Wilderness – An area of undeveloped federal land retaining its primeval character and influence, without permanent improvement or human habitation, that is protected and managed so as to preserve its natural conditions and that (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least 5,000 acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.

Wilderness Study Area (WSA) – A roadless area that has been inventoried and found to be wilderness in character, has few human developments, and provides outstanding opportunities for solitude and primitive recreation, as described in Section 603 of the Federal Land Policy and Management Act of 1976 and in Section 2(c) of the Wilderness Act of 1964.

Wilderness Values – Values established in the Wilderness Act, such as solitude and naturalness.

Wildfire – Any unwanted wildland fire.

Wild Horses and Burros – Animals that are the subject of the Wild Free-Roaming Horse and Burro Act of 1971 (PL 92-195) and defined as “all unbranded and unclaimed horses and burros on public lands of the United States.”

Wildland Fire – Any non-structure fire that occurs in the wild. Three distinct types of wildland fire have been defined and include wildfire, wildland fire use, and prescribed fire.

Wildfire – An unplanned and unwanted wildland fire, including unauthorized human-caused fires, escaped wildland fire use events, escaped prescribed fire projects, and all other wildland fires where the objective is to put the fire out.

Wildland Fire Use – The application of the appropriate management response to naturally ignited wildland fires to meet specific resource management objectives in predefined designated areas outlined in fire management plans.

Prescribed Fire – Any fire ignited by management actions to meet specific objectives.

Wildland Fire Situation Analysis – A decisionmaking process in which the agency administrator or representative does the following:

- describes the situation (fire),
- establishes objectives and constraints for managing the fire,
- compares multiple strategic wildland fire management alternatives,
- evaluates the expected effects of the alternatives,
- selects the preferred alternative, and
- documents the decision.

The format and level of detail required depend on the incident and its complexity. The key is to document the decision.

Wildland-Urban Interface (WUI) – The line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetation fuels.

Wildlings– Young seedlings that develop naturally in the wild and are sometimes transplanted

Wind-Scoured Areas – Areas, generally in interstitial spaces, where the finer soil particles have blown away, sometimes leaving residual gravel, rock, or exposed roots on the soil surface.

Withdrawal – An action that restricts the use of public lands by removing them from the operation of some or all of the public land or mining laws.

Woodland – A forest community occupied mainly by uncommercial species such as juniper, mountain mahogany, and aspen.

Yield – Total forest growth over a specified period of time, less mortality, unmarketable fiber, and cull.

Zeolites – Hydrated sodium alumina silicates, either naturally-occurring (mined) or synthetically manufactured, with ion exchange properties. Zeolites were formerly used extensively for residential and commercial water softening, but have been largely replaced by synthetic organic cation resin ion exchangers.

Zone of Saturation – Underground region within which all openings are filled with water. The top of the zone of saturation is called the water table. The water within the zone of saturation is called groundwater.

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ROUTE INVENTORY All Alternatives



Legend

- Cities
- Lakes
- Bureau of Land Management
- California
- 2 Wheel Drive
- 4 Wheel Drive
- All Terrain Vehicles
- Non-Motorized

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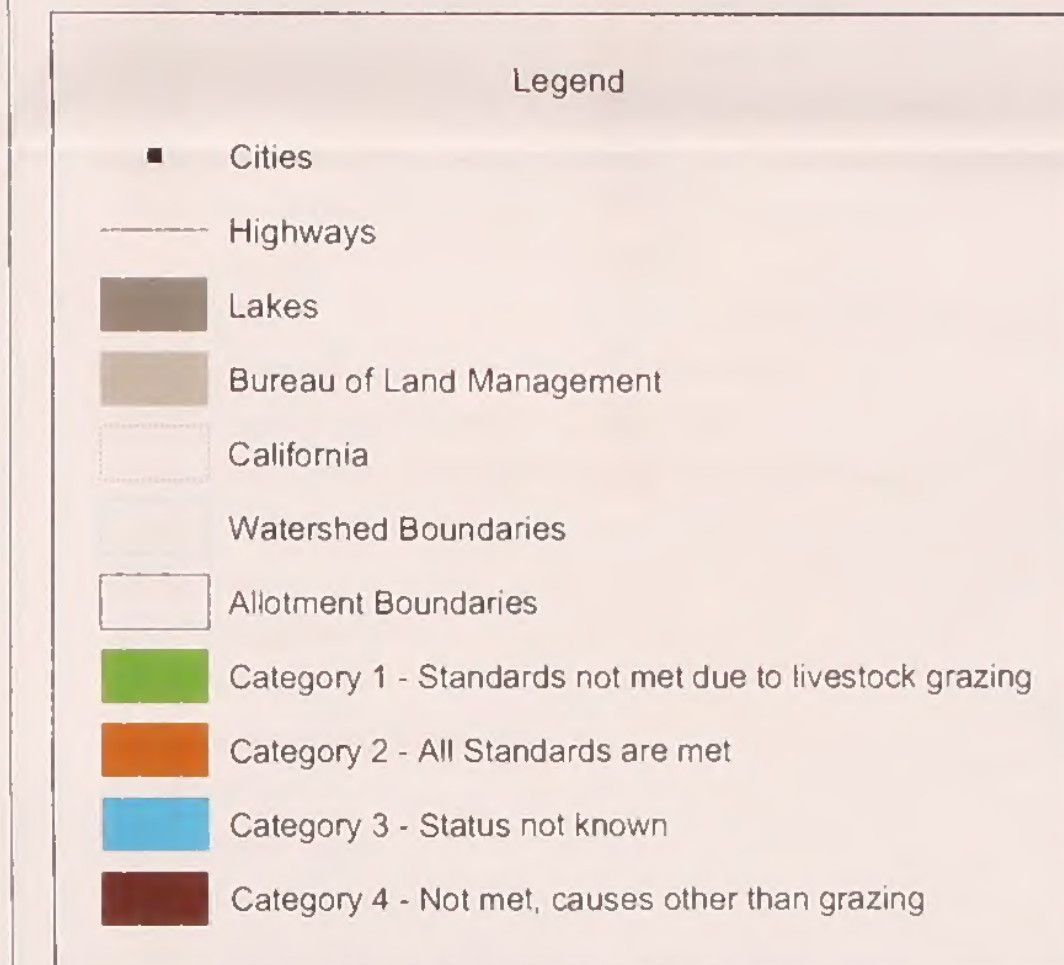
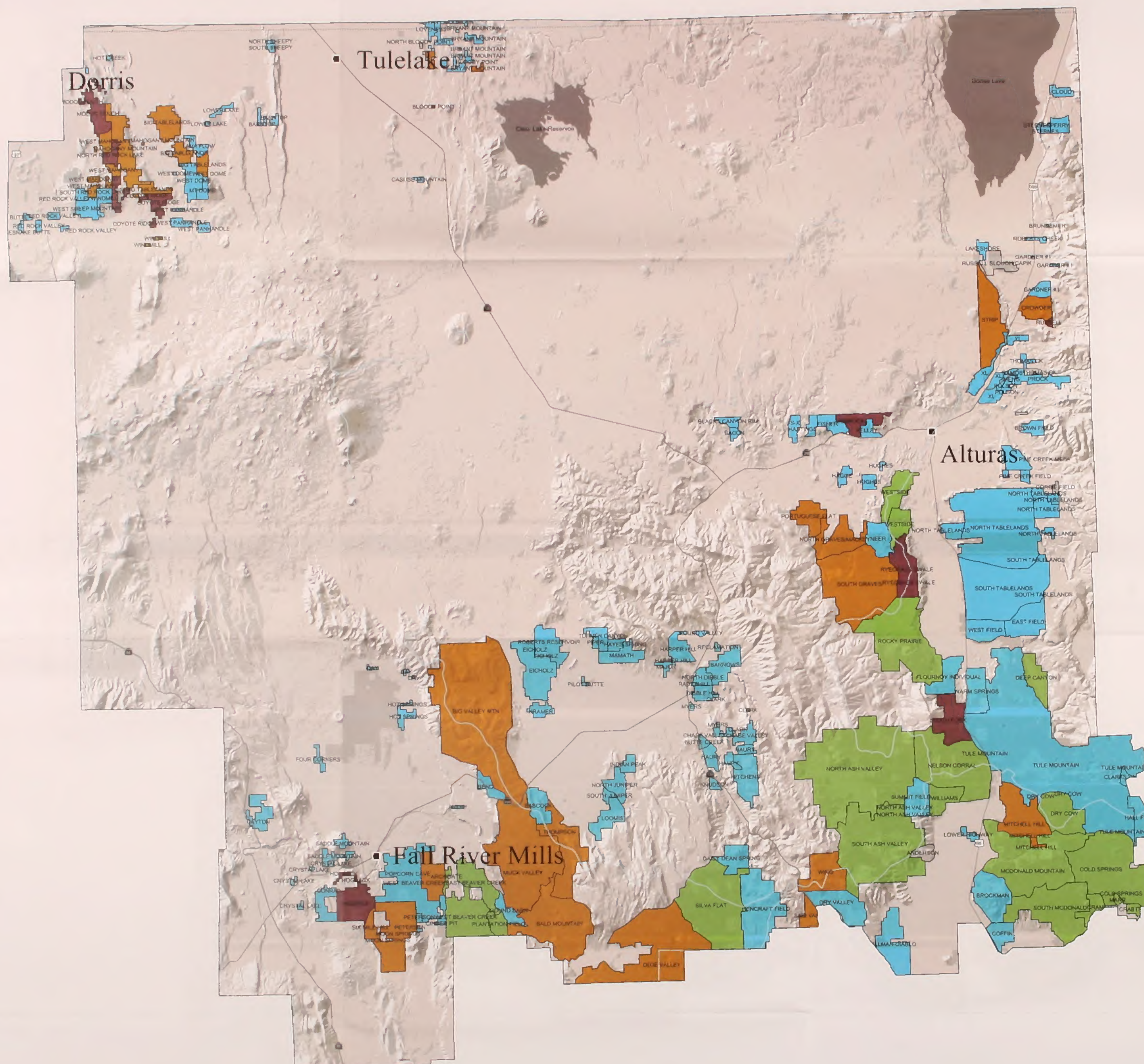
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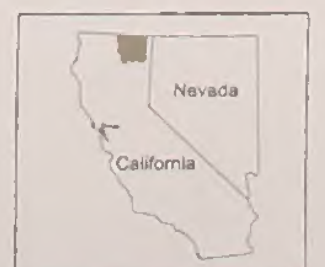
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